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LOGARITHMIC

AND OTHER

MATHEMATICAL TABLES

BY

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ASTRONOMER IN THE LICK OBSERVATORY

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PREFACE.

THE extended calculations required by some of the applications of trigonometry are laborious even to experienced computers, and to beginners are often a fruitful source of discouragement. Experience in making calculations and familiarity with the formulas employed suggest methods of arrangement by which skilful computers shorten their work and save much of their time. The aim should always be to secure the results to the required degree of accuracy with a minimum expenditure of time and labor. So far as the mechanical part of the work is concerned, the principal factors leading to this end are the proper arrangement of the formulas employed, the use of conveniently arranged tables having the needed helps for facilitating interpolation, and the use of no more places of decimals than are necessary to secure the desired accuracy in the results.

Orderly arrangement is almost indispensable to correct and rapid computation; on this account the practice of making computations on scraps of paper without systematic arrangement should not be followed. In the beginning, an outline of the entire solution should be made by writing the symbols of the quantities to be used in a vertical column, those to be combined being placed adjacent. In the same solution, turning more than once to the same place in the tables should be avoided, by taking at one opening all the functions of a given angle that may be required, and writing them in their proper places. The tables employed should be conveniently arranged, and, in general, should have auxiliary tables of proportional parts on the margins of the pages, so that the interpolations can easily be made mentally.

The number of decimal places to be used in any calculation is governed by the character of the data given, and the degree of accuracy required in the results. When the data have great precision, and the results are required with all attainable accuracy, seven decimal places must be used, or even a larger number. But for nearly all calculations such precision is not required, and the use of logarithms to five places of decimals is sufficient, as they afford results which are generally correct to one ten-thousandth

part. In calculations where this degree of accuracy is not necessary, a still smaller number of decimal places may be used. In such cases natural numbers and the natural trigonometric functions are frequently more convenient than their logarithms.

In compiling this book for general use, the needs of computers and of students have been kept in view. The arrangements of the tables are those which have been found the most convenient by experienced computers; they are at the same time such as are best adapted to the use of students. All needed helps are given for facilitating interpolation. Auxiliary tables of proportional parts accompany the logarithmic portions of the book, but are omitted in the table of natural trigonometric functions, where differences are generally small.

Throughout the greater part of the book every tenth line is enclosed by parallel rules, and the other lines are grouped in threes. This gives the pages an open appearance, enabling one to find more readily the numbers sought, and securing in the trigonometric tables a symmetrical arrangement such that the order is the same in reading from the bottom of the page as from the top.

The auxiliaries S and T, which are always used in connection with the logarithms of numbers, are conveniently placed at the bottom of pages 2 to 21, instead of in a separate table. Their arithmetical complements, CS and CT, are to be found on pages 62 to 64, adjacent to the logarithmic trigonometric functions with which they are used.

The tables of addition and subtraction logarithms are based on those of Zech. The argument in each of these tables is obtained by subtracting the smaller logarithm from the larger. The function is always added to the larger logarithm in addition, and always subtracted from it in subtraction. On account of these uniform ways of proceeding, these tables are more convenient than the Gaussian tables.

NOTE TO THE FIFTH EDITION.

The changes in this edition are as follows: Some of the astronomical constants at the end of the book have been altered to bring them into agreement with the results of recent investigations. The values of $\log \tan 10^\circ 24'$, $\log \sin 26^\circ 49'$, and $\log \tan 30^\circ 13'$ have been corrected. No other errors in the third and fourth editions have come to my notice.

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INTRODUCTION.

Logarithms are used in lengthy numerical calculations to diminish the labor of multiplication, division, involution and evolution, by respectively substituting for them the operations of addition, subtraction, multiplication and division.

The rules for their use are as follows:

The logarithm of a product is equal to the sum of the logarithms of its factors.

The logarithm of a quotient is equal to the logarithm of the dividend, minus the logarithm of the divisor.

The logarithm of any power of a number is equal to the logarithm of the number multiplied by the index of the power.

The logarithm of any root of a number is equal to the logarithm of the number divided by the index of the root.

Or, expressed in formulas,

$$\log A \times B = \log A + \log B, \quad \log \frac{A}{B} = \log A - \log B,$$

$$\log A^n = n \log A, \quad \log \sqrt[n]{A} = \frac{\log A}{n}.$$

These rules are true for all systems of logarithms. The *Common Logarithms* are the only ones used in numerical calculations and in the following pages they are always meant unless the contrary is stated.

The common logarithm of a given number is the index of that power of 10 which is equal to the number. Thus, 2 is the logarithm of 100, because $10^2 = 100$; this equation is usually written $\log 100 = 2$. 10 is the *base* of the system. A *system of logarithms* comprises the logarithms of all positive numbers to a given *base*.

From the definition of common logarithms it follows, that

| | |
|-------------------|---------------------|
| $\log 1 = 0,$ | $\log 0.1 = -1,$ |
| $\log 10 = +1,$ | $\log 0.01 = -2,$ |
| $\log 100 = +2,$ | $\log 0.001 = -3,$ |
| $\log 1000 = +3,$ | $\log 0.0001 = -4,$ |
| etc., | etc., |

from which it is evident, that logarithms are, in general, not integers. Thus, the logarithm of a number between

| | | | |
|----------|------|----|---------------------------|
| 0.01 and | 0.1 | is | $-2 + \text{a fraction},$ |
| 0.1 and | 1 | is | $-1 + \text{a fraction},$ |
| 1 and | 10 | is | $0 + \text{a fraction},$ |
| 10 and | 100 | is | $1 + \text{a fraction},$ |
| 100 and | 1000 | is | $2 + \text{a fraction}.$ |

The fractional part of a logarithm is usually expressed decimally and is so taken as to be positive. It is then called the *mantissa*, and the integral part is called the *characteristic*.

Changing the decimal point in a number is equivalent to multiplying or dividing it by an integral power of 10; consequently, the logarithms of numbers which are the same, excepting the position of the decimal point, differ by integers. Thus the logarithm of 389.4 is 2.59040, and since $38940 = 100 \times 389.4$, the first rule for the use of logarithms gives

$$\begin{aligned}\log 38940 &= \log 100 + \log 389.4 \\ &= 2 + 2.59040 = 4.59040.\end{aligned}$$

Similarly,

$$\begin{aligned}\log 3.8940 &= \log .01 + \log 389.4 \\ &= -2 + 2.59040 = 0.59040.\end{aligned}$$

Hence,

The mantissae of the logarithms of all numbers composed of the same figures in the same order, are the same.

The value of the characteristic depends upon the position of the decimal point in the number. An inspection of the above table shows, that

The characteristic of the logarithm of a number, partly or wholly integral, is zero or positive, and one less than the number of figures in the integral portion;

The characteristic of the logarithm of a pure decimal is negative, and one more than the number of ciphers preceding the first significant figure.

Examples: The mantissae of the logarithms of 349600, 3496, 3.496, .003496 are the same, being .54357; their characteristics are +5, +3, 0 and -3, respectively. Thus, $\log .003496 = 3.54357$, the minus sign being placed over the characteristic to indicate that it only is negative.

The rule given above for determining the characteristic of the logarithm of a pure decimal is strictly correct, and so also is the manner of writing the negative characteristic. In computing, however, it is not desirable to use the characteristics in the manner indicated. It is preferable to add 10 to logarithms having negative characteristics and to allow for the increase by a proper interpretation of the results. When so increased the characteristics may, in all operations, except in some cases in the extraction of roots, be treated as if they were positive. When written in this manner, the rule for their determination is as follows:

The characteristic of the logarithm of a pure decimal is 9, diminished by the number of ciphers preceding the first significant figure.

Examples: The characteristics of the logarithms of .8437, .02804, .000105 and .000009207 are respectively 9, 8, 6 and 4.

The logarithmic trigonometric functions, and the logarithms of constants less than unity contained in these tables, have had their characteristics increased by 10.

In finding the logarithm of a root an apparent difficulty arises when the characteristic is negative and is not a multiple of the index of the root. The difficulty disappears by increasing the characteristic negatively by the smallest number which will make it such a multiple and by increasing the mantissa positively by the same number. Thus, the logarithm of .003392 is 3.53046. The logarithm of its square root is obtained by writing its logarithm in the form $-4 + 15.3046$ and dividing by 2, the index of the root. This gives $-2 + .76523$, or 2.76523, or 8.76523.

A better way of proceeding is to add 10 times the index of the root to the logarithm and then divide by the index of the root. Thus, in the example given, adding 20 to the logarithm of .003392 and dividing by 2, gives 8.76523, which is the logarithm of the square root. By adding 30 and dividing by 3, the logarithm of the cube root is obtained. The logarithm of the cube root of .003392 is 9.17682.

The *arithmetical complement* of a logarithm is the difference obtained by subtracting it from 0, or from 10, if it is desired to avoid negative characteristics.

It is easily obtained by subtracting each figure of the logarithm, except the last significant one, from 9; the last significant figure must be subtracted from 10. Thus, $\log 2763 = 3.44138$, and its arithmetical complement is 6.55862. It is to be noticed, that the logarithm of the reciprocal of a number, is the arithmetical complement of the logarithm of the number; for example, $\log \frac{1}{2763} = 6.55862$.

Since the sine and cosecant, cosine and secant, tangent and cotangent are reciprocals, their logarithms are arithmetical complements. Thus, $\log \sin 22^\circ 18' 24'' = 9.57928$, and $\log \operatorname{cosec} 22^\circ 18' 24'' = 0.42072$; $\log \cos 22^\circ 18' 24'' = 9.96622$, and $\log \sec 22^\circ 18' 24'' = 0.03378$; $\log \tan 22^\circ 18' 24'' = 9.61306$, and $\log \cot 22^\circ 18' 24'' = 0.38694$.

A dash printed over a terminal 5 indicates that the true value is less than 5. For example the logarithm of 59903 to seven decimal places is 4.7774486; to five decimal places this is written 4.77745. If only four decimal places are required in a computation, the 5 is neglected. Thus, the above logarithm is written 4.7774.

When a dash is not printed over a terminal 5, and only four decimal places are required, the fourth decimal figure is increased by one and the 5 neglected. For example, the logarithm of 7671 to five decimal places is 3.88485; to four decimal places this is written 3.8849.

TABLE I.

Pages 2-3 contain the mantissae of the logarithms of all numbers of one, two and three figures; the characteristics are determined by the rules previously given. If the number has one or two figures, it is given in the first column, headed N, and the mantissa of its logarithm is directly opposite it in the second column, headed L. Thus, $\log 3 = 0.47712$, $\log 24 = 1.38021$, $\log .067 = 8.82607$. If the number has three figures, the first two are given in the first column and the third in the horizontal row at the top or bottom of the page, and the mantissa of its logarithm is at the intersection of the line containing the first two figures and the column containing the third. Thus, $\log 184 = 2.26482$, $\log 89.1 = 1.94988$, $\log 9.37 = 0.97174$.

Pages 4-21 contain the mantissae of the logarithms of numbers from 100 to 10009. The arrangement is similar to that just described. The first three figures of the number are given in the first column and the fourth in the horizontal row at the top or bottom of the page. The last three figures of the mantissae are given in the columns headed 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and the first two, at intervals, in the second column under L. When the first two are not given in any line, they are to be taken from the first line above containing them, except, when the last three are preceded by a *, in which case they are to be taken from the next line. Thus, (p. 13) $\log 5764 = 3.76072$, $\log 58.35 = 1.76604$, $\log .5889 = 9.77004$.

When the number has more than four figures, its logarithm is found by *interpolation*. For small differences, it is assumed, that differences between numbers are proportional to the differences between their logarithms. For example, required the logarithm of 168.342. The number has three orders of integers, hence the characteristic is 2. Disregarding the decimal point, the number is 168342. The round numbers, having four significant figures, next smaller and next greater than this, are 168300 and 168400, and their mantissae are (p. 5) .22608 and .22634. These numbers differ by 100, their mantissae, by 26. 26, being the difference between two successive values in the table, is the *tabular difference*. 168342 is 42 greater than 168300, hence its mantissa is $\frac{42}{100}$ of 26 (= 11, to the nearest integer,) greater than that of 168300. Therefore, $\log 168.342 = 2.22619$. Similarly, $\log 39.6427 = 1.59816$.

To facilitate interpolation, the tenths of the *tabular differences* are given under P P, (*proportional parts*). Thus, from the proportional table for 26, (p. 5),

$$\begin{array}{rcccccl} & & \text{the proportional part for 4} & = & 10.4 \\ & \frac{1}{10} & \text{"} & \text{"} & 2 = .52 \\ \text{Therefore,} & & \text{"} & \text{"} & 42 = 10.92, \end{array}$$

or 11, to the nearest integer, which agrees with the value above.

By reversing these operations, the number corresponding to a given logarithm may be found. For example, find the number of which 1.47384 is the logarithm. The next smaller mantissa (p. 7) is .47378. It corresponds to the number 2977. The difference between it and the next greater mantissa, .47392, is 14, while the difference between it and the given mantissa is 6. The figures following 2977 are obtained by dividing 6 by 14, giving 43. Hence, the number is 29.7743. The interpolation is facilitated by using the proportional table for 14. In it, 5.6 is the value next smaller than the given difference 6; 4, the fifth figure of the number, corresponds to 5.6. The difference between 6 and 5.6 is .4, which becomes 4.0 by removing the decimal point one place to the right. Corresponding to 4.0, the nearest value is 3, this is the sixth figure of the number. The interpolations, where proportional parts are given, should be made mentally, the results only being written.

The logarithmic sines and tangents of small angles may be found by means of the values of S and T, given at the bottoms of the pages. The formulas for their use are as follows:

$$\begin{array}{l} \log \sin = \log \text{arc} + S, \\ \log \tan = \log \text{arc} + T, \end{array}$$

the angle being expressed in seconds of arc. The value of S or T, to be used in any case, is that which corresponds to the angle.

Example 1. Find $\log \sin 3''.4785$.

$$\begin{array}{l} \log 3.4785 = 0.54139 \quad \text{p. 8.} \\ S = 4.68557 \quad \text{p. 2.} \end{array}$$

$$\log \sin 3''.4785 = 5.22696.$$

Example 2. Find $\log \tan 1^\circ 14' 17''.84 = \log \tan 4457''.84$.

$$\begin{array}{l} \log 4457''.84 = 3.64912 \quad \text{p. 10.} \\ T = 4.68564 \quad \text{p. 10.} \end{array}$$

$$\log \tan 1^\circ 14' 17''.84 = 8.33476.$$

TABLE II.

When the logarithms of two numbers are given and the logarithm of their sum or difference is required, it may be found by using the addition or subtraction table. The equations at the bottoms of the pages, 24-36 inclusive, indicate the manner of using these tables. In interpolating, it is to be noticed that the function B decreases as the argument A increases; consequently, the proportional parts must be subtracted instead of added.

Example 1. Given, $\log a = 0.98519$ and $\log b = 0.64834$. Required $\log (a + b)$.

$$\begin{array}{l} \log a = 0.98519 \\ \log b = 0.64834 \\ A = \log a - \log b = 0.33685 \\ B = 0.16448 \quad \text{p. 24.} \\ \log (a + b) = \log a + B = 1.14967. \end{array}$$

In this case the tabular difference is 31, the proportional table for 31 gives 26 as the proportional part corresponding to 85, the last two figures of A; subtracting

26 from 0.16474, the value of B in the table corresponding to a value of $A = 0.33600$, gives 0.16448. This is the value of B corresponding to $A = 0.33685$.

Example 2. Given, $\log a$ and $\log b$, as in Example 1. Required $\log (a - b)$.

In this case $x = \log a - \log b$ is $>.3$, and, as above,

$$A = \log a - \log b = 0.33685$$

$$B = 0.26794 \quad \text{p. 29.}$$

$$\log (a - b) = \log a - B = 0.71725.$$

Example 3. Given, $\log a = 0.74346$ and $\log b = 0.59484$. Required $\log (a - b)$.

In this case $x = \log a - \log b$ is $<.3$, and

$$B = \log a - \log b = 0.14862$$

$$A = 0.53790 \quad \text{p. 33.}$$

$$\log (a - b) = \log a - A = 0.20556.$$

TABLES III AND IV.

These tables, pp. 37-106, contain the logarithms of the trigonometric functions. The headings of the pages and columns indicate what they contain. The degrees are given at the tops, and bottoms, of the pages. On pp. 37-49, the minutes and each ten seconds are given in columns at the left and right, headed ' ', and the odd seconds are given in a horizontal row at the top and bottom of each page. On pp. 50-106, the minutes are given in columns at the left and right, headed ' '; and on pp. 50-60, each ten seconds is given in a horizontal row at the top and bottom of each page. The columns of minutes on the left read downward; the horizontal rows at the top, from left to right; these go with the degrees at the tops of the pages. The columns of minutes at the right and the horizontal rows at the bottom, read in the opposite directions, and go with the degrees at the bottoms of the pages. On pp. 62-106, the *tabular differences* of the logarithmic sines and cosines are given in the columns headed *d* (*difference*), and those of the logarithmic tangents and cotangents in the columns headed *c d* (*common difference*).

Example 1. Find $\log \sin 0^\circ 37' 24''.37$.

Page 44. $\log \sin 0^\circ 37' 24'' = 8.03659$ Tabular difference = 19.

proportional part for 3 = 5.7

to " " " 7 = 1.33

$$\log \sin 0^\circ 37' 24''.37 = 8.03666.$$

The tabular difference is 19 and the proportional table for 19 (p. 45), is used to facilitate the interpolation. The tabular difference is obtained by subtracting $\log \sin 0^\circ 37' 24' = 8.03659$ from $\log \sin 0^\circ 37' 25'' = 8.03678$. In performing this subtraction, only the final figures of the logarithms need be used. Thus, in this case, subtract 59 from 78. The interpolation should be made mentally and only the final result written.

Example 2. Find $\log \tan 0^\circ 42' 17''.48$.

Page 47. $\log \tan 0^\circ 42' 17'' = 8.08992$ Tabular difference = 17.

proportional part for .48 = 8.16

$$\log \tan 0^\circ 42' 17''.48 = 8.09000.$$

Example 3. Find $\log \cos 0^\circ 57' 19''$.

This is given without interpolation in the first column of page 48, the first figures being given at the top of the column. The value is 9.99994.

Example 4. Find $\log \cos 89^\circ 43' 26''.4$.

Page 40. $\log \cos 89^\circ 43' 26'' = 7.68296$ Tabular difference = 44.

proportional part for 4 = 17.6

$$\log \cos 89^\circ 43' 26''.4 = 7.68278.$$

The proportional part is subtracted, because the cosine, here, decreases as the angle increases.

Example 5. Find $\log \sin 3^\circ 27' 44''.6$.

Page 54. $\log \sin 3^\circ 27' 40'' = 8.78083$ Tabular difference = 35.
 proportional part for 4 = 14.0
 $\frac{1}{10}$ " " " 6 = 2.1
 $\log \sin 3^\circ 27' 44''.6 = 8.78099$.

Also from pages 54 and 55,

$\log \cos 3^\circ 27' 44''.6 = 9.99920$.
 $\log \tan 3^\circ 27' 44''.6 = 8.78178$.

Example 6. Find $\log \tan 8^\circ 33' 17''.4$.

Page 70. $\log \tan 8^\circ 33' 00'' = 9.17708$ Tabular difference = 86
 proportional part for 10 = 14.3
 " " " 7 = 10.0
 $\frac{1}{10}$ " " " 4 = .57
 $\log \tan 8^\circ 33' 17''.4 = 9.17733$.

Example 7. Find $\log \cot 56^\circ 43' 24''.7$.

Page 95. $\log \cot 56^\circ 43' 00'' = 9.81721$ Tabular difference = 28.
 proportional part for 20 = 9.3
 " " " 4 = 1.9
 $\frac{1}{10}$ " " " 7 = .33
 $\log \cot 56^\circ 43' 24''.7 = 9.81709$.

When the logarithm of a trigonometric function is given, the angle may be found by reversing the above operations.

Example 8. Given, $\log \tan x = 9.87258$. Find x .

In the column of logarithmic tangents on page 98, we find $\log \tan 36^\circ 42' = 9.87238$, with the tabular difference 26. The difference between this logarithm and the given one is 20. The proportional table for 26 gives

proportional part for 40 = 17.3
 " " " 6 = 2.6
 $\frac{1}{10}$ " " " 2 = .09
 consequently " " " 46.2 = 19.99, or very nearly 20.

Hence the number of seconds is 46.2, and the required angle is $36^\circ 42' 46''.2$.

When a very small angle is to be found by means of its logarithmic sine or tangent, and accuracy is desired, the arithmetical complement of S or T, pp. 2-21, should be used. These are given in the columns headed C S and C T, pp. 62-64. The formulas for their use are as follows:

$$\begin{aligned}\log \text{arc} &= \log \sin + \text{C S}, \\ \log \text{arc} &= \log \tan + \text{C T},\end{aligned}$$

the angle being expressed in seconds of arc. The value of C S or C T to be used in any case, is that which corresponds to the angle.

Example 9. Given, $\log \sin x = 6.82973$. Find x .

The value of x , (see p. 62), lies between $0^\circ 2'$ and $0^\circ 3'$, or between $120''$ and $180''$, and, corresponding to this,

$$\begin{aligned}\text{C S} &= 5.31443 \\ \log \sin x &= 6.82973 \\ \log \text{arc} &= 2.14416.\end{aligned}$$

The number corresponding to the logarithm 2.14416 is, (p. 4), 139.368. Therefore, $x = 139''.368 = 0^\circ 2' 19''.368$.

It is sometimes required to find the logarithm of one trigonometric function from that of another, without requiring the angle. To facilitate this, special proportional tables, headed with the tabular differences of both functions, are given, (pp. 71-106), wherever the space admits it.

Example 10. Given, $\log \tan x = 9.67644$. Required $\log \cos x$.

The difference between the given logarithm and that given in the table, 9.67622, (see p. 87, opposite $25^{\circ} 23'$), is 22. The tabular differences of the two logarithmic functions at this place are 32 and 6. In the proportional table for $\frac{3}{2}$, 22 corresponds to 4; this, subtracted from the tabular logarithmic cosine 9.95591, gives the required $\log \cos x = 9.95587$.

In the examples already given, the angles have all been less than 90° . The logarithms of trigonometric functions of angles greater than 90° may be obtained by remembering the relations given in the following table:

| Angle | Sine | Cosine | Tangent | Cotangent |
|-------------------|-----------|-----------|-----------|-----------|
| x | $+\sin x$ | $+\cos x$ | $+\tan x$ | $+\cot x$ |
| $90^{\circ} + x$ | $+\cos x$ | $-\sin x$ | $-\cot x$ | $-\tan x$ |
| $180^{\circ} + x$ | $-\sin x$ | $-\cos x$ | $+\tan x$ | $+\cot x$ |
| $270^{\circ} + x$ | $-\cos x$ | $+\sin x$ | $-\cot x$ | $-\tan x$ |

For angles greater than 90° , the degrees are given at the tops and bottoms of the pages in smaller type. Where these have been obtained from the acute angle on the same page, by adding 90° or 270° , they are preceded by a *. This indicates that the co-function is to be taken. Otherwise, the direct function is to be taken. The algebraic signs of the functions, as indicated by the above table, must be attended to.

Example 11. Find $\log \sin 112^{\circ} 15' 17''$.

Page 84. $\log \sin 112^{\circ} 15' 00'' = 9.96640$ Tabular difference = 6.
 proportional part for $17'' = 2$, nearly,
 $\log \sin 112^{\circ} 15' 17'' = 9.96638$.

From the same page, $\log \tan 202^{\circ} 28' 34'' = 9.61671$, $\log \cos 202^{\circ} 28' 34'' = 9.96569$, $\log \cot 292^{\circ} 18' 37'' = 9.61314$.

In the last two examples the „ following the logarithm indicates that the trigonometric function is negative. This is the usual way of indicating that the number corresponding to a logarithm is negative.

TABLE V.

Pages 108-130 contain the natural trigonometric functions for each minute. The arrangement is the same as that of the logarithms of the trigonometric functions, pp. 62-106, except that differences and proportional parts are not given.

TABLE VI, ETC.

Pages 131-139 contain the squares, cubes, square roots and cube roots of numbers from 1 to 1020. The arrangement of this table, and also of the ones which follow it, will be understood by inspecting them.



I

TABLE OF THE COMMON
LOGARITHMS OF NUMBERS

WITH THE AUXILIARIES S AND T.

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------------|----------|--------|----------|--------|--------|----------------|----------|--------|----------|--------|
| 0 | — ∞ | 00 000 | 30 103 | 47 712 | 60 206 | 69 897 | 77 815 | 84 510 | 90 309 | 95 424 |
| 1 | 00 000 | 04 139 | 07 918 | 11 394 | 14 613 | 17 609 | 20 412 | 23 045 | 25 527 | 27 875 |
| 2 | 30 103 | 32 222 | 34 242 | 36 173 | 38 021 | 39 794 | 41 497 | 43 136 | 44 716 | 46 240 |
| 3 | 47 712 | 49 136 | 50 515 | 51 851 | 53 148 | 54 407 | 55 630 | 56 820 | 57 978 | 59 106 |
| 4 | 60 206 | 61 278 | 62 325 | 63 347 | 64 345 | 65 321 | 66 276 | 67 210 | 68 124 | 69 020 |
| 5 | 69 897 | 70 757 | 71 600 | 72 428 | 73 239 | 74 036 | 74 819 | 75 587 | 76 343 | 77 085 |
| 6 | 77 815 | 78 533 | 79 239 | 79 934 | 80 618 | 81 291 | 81 954 | 82 607 | 83 251 | 83 885 |
| 7 | 84 510 | 85 126 | 85 733 | 86 332 | 86 923 | 87 506 | 88 081 | 88 649 | 89 209 | 89 763 |
| 8 | 90 309 | 90 849 | 91 381 | 91 908 | 92 428 | 92 942 | 93 450 | 93 952 | 94 448 | 94 939 |
| 9 | 95 424 | 95 904 | 96 379 | 96 848 | 97 313 | 97 772 | 98 227 | 98 677 | 99 123 | 99 564 |
| 10 | 00 000 | 00 432 | 00 860 | 01 284 | 01 703 | 02 119 | 02 531 | 02 938 | 03 342 | 03 743 |
| 11 | 04 139 | 04 532 | 04 922 | 05 308 | 05 690 | 06 070 | 06 446 | 06 819 | 07 188 | 07 555 |
| 12 | 07 918 | 08 279 | 08 636 | 08 991 | 09 342 | 09 691 | 10 037 | 10 380 | 10 721 | 11 059 |
| 13 | 11 394 | 11 727 | 12 057 | 12 385 | 12 710 | 13 033 | 13 354 | 13 672 | 13 988 | 14 301 |
| 14 | 14 613 | 14 922 | 15 229 | 15 534 | 15 836 | 16 137 | 16 435 | 16 732 | 17 026 | 17 319 |
| 15 | 17 609 | 17 895 | 18 184 | 18 469 | 18 752 | 19 033 | 19 312 | 19 590 | 19 866 | 20 140 |
| 16 | 20 412 | 20 683 | 20 952 | 21 219 | 21 484 | 21 748 | 22 011 | 22 272 | 22 531 | 22 789 |
| 17 | 23 045 | 23 300 | 23 553 | 23 805 | 24 055 | 24 304 | 24 551 | 24 797 | 25 042 | 25 285 |
| 18 | 25 527 | 25 768 | 26 007 | 26 245 | 26 482 | 26 717 | 26 951 | 27 184 | 27 416 | 27 646 |
| 19 | 27 875 | 28 103 | 28 330 | 28 556 | 28 780 | 29 003 | 29 226 | 29 447 | 29 667 | 29 885 |
| 20 | 30 103 | 30 320 | 30 535 | 30 750 | 30 963 | 31 175 | 31 387 | 31 597 | 31 806 | 32 015 |
| 21 | 32 222 | 32 428 | 32 634 | 32 838 | 33 041 | 33 244 | 33 445 | 33 646 | 33 846 | 34 044 |
| 22 | 34 242 | 34 439 | 34 635 | 34 830 | 35 025 | 35 218 | 35 411 | 35 603 | 35 793 | 35 984 |
| 23 | 36 173 | 36 361 | 36 549 | 36 736 | 36 922 | 37 107 | 37 291 | 37 475 | 37 658 | 37 840 |
| 24 | 38 021 | 38 202 | 38 382 | 38 561 | 38 739 | 38 917 | 39 094 | 39 270 | 39 445 | 39 620 |
| 25 | 39 794 | 39 967 | 40 140 | 40 312 | 40 483 | 40 654 | 40 824 | 40 993 | 41 162 | 41 330 |
| 26 | 41 497 | 41 664 | 41 830 | 41 996 | 42 160 | 42 325 | 42 488 | 42 651 | 42 813 | 42 975 |
| 27 | 43 136 | 43 297 | 43 457 | 43 616 | 43 775 | 43 933 | 44 091 | 44 248 | 44 404 | 44 560 |
| 28 | 44 716 | 44 871 | 45 025 | 45 179 | 45 332 | 45 484 | 45 637 | 45 788 | 45 939 | 46 090 |
| 29 | 46 240 | 46 389 | 46 538 | 46 687 | 46 835 | 46 982 | 47 129 | 47 276 | 47 422 | 47 567 |
| 30 | 47 712 | 47 857 | 48 001 | 48 144 | 48 287 | 48 430 | 48 572 | 48 714 | 48 855 | 48 996 |
| 31 | 49 136 | 49 276 | 49 415 | 49 554 | 49 693 | 49 831 | 49 969 | 50 106 | 50 243 | 50 379 |
| 32 | 50 515 | 50 651 | 50 786 | 50 920 | 51 055 | 51 188 | 51 322 | 51 455 | 51 587 | 51 720 |
| 33 | 51 851 | 51 983 | 52 114 | 52 244 | 52 375 | 52 504 | 52 634 | 52 763 | 52 892 | 53 020 |
| 34 | 53 148 | 53 275 | 53 403 | 53 529 | 53 656 | 53 782 | 53 908 | 54 033 | 54 158 | 54 283 |
| 35 | 54 407 | 54 531 | 54 654 | 54 777 | 54 900 | 55 023 | 55 145 | 55 267 | 55 388 | 55 509 |
| 36 | 55 630 | 55 751 | 55 871 | 55 991 | 56 110 | 56 229 | 56 348 | 56 467 | 56 585 | 56 703 |
| 37 | 56 820 | 56 937 | 57 054 | 57 171 | 57 287 | 57 403 | 57 519 | 57 634 | 57 749 | 57 864 |
| 38 | 57 978 | 58 092 | 58 206 | 58 320 | 58 433 | 58 546 | 58 659 | 58 771 | 58 883 | 58 995 |
| 39 | 59 106 | 59 218 | 59 329 | 59 439 | 59 550 | 59 660 | 59 770 | 59 879 | 59 988 | 60 097 |
| 40 | 60 206 | 60 314 | 60 423 | 60 531 | 60 638 | 60 746 | 60 853 | 60 959 | 61 066 | 61 172 |
| 41 | 61 278 | 61 384 | 61 490 | 61 595 | 61 700 | 61 805 | 61 909 | 62 014 | 62 118 | 62 221 |
| 42 | 62 325 | 62 428 | 62 531 | 62 634 | 62 737 | 62 839 | 62 941 | 63 043 | 63 144 | 63 246 |
| 43 | 63 347 | 63 448 | 63 548 | 63 649 | 63 749 | 63 849 | 63 949 | 64 048 | 64 147 | 64 246 |
| 44 | 64 345 | 64 444 | 64 542 | 64 640 | 64 738 | 64 836 | 64 933 | 65 031 | 65 128 | 65 225 |
| 45 | 65 321 | 65 418 | 65 514 | 65 610 | 65 706 | 65 801 | 65 896 | 65 992 | 66 087 | 66 181 |
| 46 | 66 276 | 66 370 | 66 464 | 66 558 | 66 652 | 66 745 | 66 839 | 66 932 | 67 025 | 67 117 |
| 47 | 67 210 | 67 302 | 67 394 | 67 486 | 67 578 | 67 669 | 67 761 | 67 852 | 67 943 | 68 034 |
| 48 | 68 124 | 68 215 | 68 305 | 68 395 | 68 485 | 68 574 | 68 664 | 68 753 | 68 842 | 68 931 |
| 49 | 69 020 | 69 108 | 69 197 | 69 285 | 69 373 | 69 461 | 69 548 | 69 636 | 69 723 | 69 810 |
| 50 | 69 897 | 69 984 | 70 070 | 70 157 | 70 243 | 70 329 | 70 415 | 70 501 | 70 586 | 70 672 |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 60° = 0 1' S | 4.68 557 | T | 4.68 557 | | | 300° = 0° 5' S | 4.68 557 | T | 4.68 558 | |
| 120 = 0 2 | 4.68 557 | | 4.68 557 | | | 360 = 0 6 | 4.68 557 | | 4.68 558 | |
| 180 = 0 3 | 4.68 557 | | 4.68 557 | | | 420 = 0 7 | 4.68 557 | | 4.68 558 | |
| 240 = 0 4 | 4.68 557 | | 4.68 557 | | | 480 = 0 8 | 4.68 557 | | 4.68 558 | |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|------|---------|--------|----------|--------|----------|--------|----------|--------|----------|------------|
| 50 | 69 897 | 69 984 | 70 070 | 70 157 | 70 243 | 70 329 | 70 415 | 70 501 | 70 586 | 70 672 |
| 51 | 70 757 | 70 842 | 70 927 | 71 012 | 71 096 | 71 181 | 71 265 | 71 349 | 71 433 | 71 517 |
| 52 | 71 600 | 71 684 | 71 767 | 71 850 | 71 933 | 72 016 | 72 099 | 72 181 | 72 263 | 72 346 |
| 53 | 72 428 | 72 509 | 72 591 | 72 673 | 72 754 | 72 835 | 72 916 | 72 997 | 73 078 | 73 159 |
| 54 | 73 239 | 73 320 | 73 400 | 73 480 | 73 560 | 73 640 | 73 719 | 73 799 | 73 878 | 73 957 |
| 55 | 74 036 | 74 115 | 74 194 | 74 273 | 74 351 | 74 429 | 74 507 | 74 586 | 74 663 | 74 741 |
| 56 | 74 819 | 74 896 | 74 974 | 75 051 | 75 128 | 75 205 | 75 282 | 75 358 | 75 435 | 75 511 |
| 57 | 75 587 | 75 664 | 75 740 | 75 815 | 75 891 | 75 967 | 76 042 | 76 118 | 76 193 | 76 268 |
| 58 | 76 343 | 76 418 | 76 492 | 76 567 | 76 641 | 76 716 | 76 790 | 76 864 | 76 938 | 77 012 |
| 59 | 77 085 | 77 159 | 77 232 | 77 305 | 77 379 | 77 452 | 77 525 | 77 597 | 77 670 | 77 743 |
| 60 | 77 815 | 77 887 | 77 960 | 78 032 | 78 104 | 78 176 | 78 247 | 78 319 | 78 390 | 78 462 |
| 61 | 78 533 | 78 604 | 78 675 | 78 746 | 78 817 | 78 888 | 78 958 | 79 029 | 79 099 | 79 169 |
| 62 | 79 239 | 79 309 | 79 379 | 79 449 | 79 518 | 79 588 | 79 657 | 79 727 | 79 796 | 79 865 |
| 63 | 79 934 | 80 003 | 80 072 | 80 140 | 80 209 | 80 277 | 80 346 | 80 414 | 80 482 | 80 550 |
| 64 | 80 618 | 80 686 | 80 754 | 80 821 | 80 889 | 80 956 | 81 023 | 81 090 | 81 158 | 81 224 |
| 65 | 81 291 | 81 358 | 81 425 | 81 491 | 81 558 | 81 624 | 81 690 | 81 757 | 81 823 | 81 889 |
| 66 | 81 954 | 82 020 | 82 086 | 82 151 | 82 217 | 82 282 | 82 347 | 82 413 | 82 478 | 82 543 |
| 67 | 82 607 | 82 672 | 82 737 | 82 802 | 82 866 | 82 930 | 82 995 | 83 059 | 83 123 | 83 187 |
| 68 | 83 251 | 83 315 | 83 378 | 83 442 | 83 506 | 83 569 | 83 632 | 83 696 | 83 759 | 83 822 |
| 69 | 83 885 | 83 948 | 84 011 | 84 073 | 84 136 | 84 198 | 84 261 | 84 323 | 84 386 | 84 448 |
| 70 | 84 510 | 84 572 | 84 634 | 84 696 | 84 757 | 84 819 | 84 880 | 84 942 | 85 003 | 85 065 |
| 71 | 85 126 | 85 187 | 85 248 | 85 309 | 85 370 | 85 431 | 85 491 | 85 552 | 85 612 | 85 673 |
| 72 | 85 733 | 85 794 | 85 854 | 85 914 | 85 974 | 86 034 | 86 094 | 86 153 | 86 213 | 86 273 |
| 73 | 86 332 | 86 392 | 86 451 | 86 510 | 86 570 | 86 629 | 86 688 | 86 747 | 86 806 | 86 864 |
| 74 | 86 923 | 86 982 | 87 040 | 87 099 | 87 157 | 87 216 | 87 274 | 87 332 | 87 390 | 87 448 |
| 75 | 87 506 | 87 564 | 87 622 | 87 679 | 87 737 | 87 795 | 87 852 | 87 910 | 87 967 | 88 024 |
| 76 | 88 081 | 88 138 | 88 195 | 88 252 | 88 309 | 88 366 | 88 423 | 88 480 | 88 536 | 88 593 |
| 77 | 88 649 | 88 705 | 88 762 | 88 818 | 88 874 | 88 930 | 88 986 | 89 042 | 89 098 | 89 154 |
| 78 | 89 209 | 89 265 | 89 321 | 89 376 | 89 432 | 89 487 | 89 542 | 89 597 | 89 653 | 89 708 |
| 79 | 89 763 | 89 818 | 89 873 | 89 927 | 89 982 | 90 037 | 90 091 | 90 146 | 90 200 | 90 255 |
| 80 | 90 309 | 90 363 | 90 417 | 90 472 | 90 526 | 90 580 | 90 634 | 90 687 | 90 741 | 90 795 |
| 81 | 90 849 | 90 902 | 90 956 | 91 009 | 91 062 | 91 116 | 91 169 | 91 222 | 91 275 | 91 328 |
| 82 | 91 381 | 91 434 | 91 487 | 91 540 | 91 593 | 91 645 | 91 698 | 91 751 | 91 803 | 91 855 |
| 83 | 91 908 | 91 960 | 92 012 | 92 065 | 92 117 | 92 169 | 92 221 | 92 273 | 92 324 | 92 376 |
| 84 | 92 428 | 92 480 | 92 531 | 92 583 | 92 634 | 92 686 | 92 737 | 92 788 | 92 840 | 92 891 |
| 85 | 92 942 | 92 993 | 93 044 | 93 095 | 93 146 | 93 197 | 93 247 | 93 298 | 93 349 | 93 399 |
| 86 | 93 450 | 93 500 | 93 551 | 93 601 | 93 651 | 93 702 | 93 752 | 93 802 | 93 852 | 93 902 |
| 87 | 93 952 | 94 002 | 94 052 | 94 101 | 94 151 | 94 201 | 94 250 | 94 300 | 94 349 | 94 399 |
| 88 | 94 448 | 94 498 | 94 547 | 94 596 | 94 645 | 94 694 | 94 743 | 94 792 | 94 841 | 94 890 |
| 89 | 94 939 | 94 988 | 95 036 | 95 085 | 95 134 | 95 182 | 95 231 | 95 279 | 95 328 | 95 376 |
| 90 | 95 424 | 95 472 | 95 521 | 95 569 | 95 617 | 95 665 | 95 713 | 95 761 | 95 809 | 95 856 |
| 91 | 95 904 | 95 952 | 95 999 | 96 047 | 96 095 | 96 142 | 96 190 | 96 237 | 96 284 | 96 332 |
| 92 | 96 379 | 96 426 | 96 473 | 96 520 | 96 567 | 96 614 | 96 661 | 96 708 | 96 755 | 96 802 |
| 93 | 96 848 | 96 895 | 96 942 | 96 988 | 97 035 | 97 081 | 97 128 | 97 174 | 97 220 | 97 267 |
| 94 | 97 313 | 97 359 | 97 405 | 97 451 | 97 497 | 97 543 | 97 589 | 97 635 | 97 681 | 97 727 |
| 95 | 97 772 | 97 818 | 97 864 | 97 909 | 97 955 | 98 000 | 98 046 | 98 091 | 98 137 | 98 182 |
| 96 | 98 227 | 98 272 | 98 318 | 98 363 | 98 408 | 98 453 | 98 498 | 98 543 | 98 588 | 98 632 |
| 97 | 98 677 | 98 722 | 98 767 | 98 811 | 98 856 | 98 900 | 98 945 | 98 989 | 99 034 | 99 078 |
| 98 | 99 123 | 99 167 | 99 211 | 99 255 | 99 300 | 99 344 | 99 388 | 99 432 | 99 476 | 99 520 |
| 99 | 99 564 | 99 607 | 99 651 | 99 695 | 99 739 | 99 782 | 99 826 | 99 870 | 99 913 | 99 957 |
| 100 | 00 000 | 00 043 | 00 087 | 00 130 | 00 173 | 00 217 | 00 260 | 00 303 | 00 346 | 00 389 |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 540" | = 0° 9' | S | 4.68 557 | T | 4.68 558 | 780" | = 0° 13' | S | 4.68 557 | T 4.68 558 |
| 600 | = 0 10 | | 4.68 557 | | 4.68 558 | 840 | = 0 14 | | 4.68 557 | 4.68 558 |
| 660 | = 0 11 | | 4.68 557 | | 4.68 558 | 900 | = 0 15 | | 4.68 557 | 4.68 558 |
| 720 | = 0 12 | | 4.68 557 | | 4.68 558 | 960 | = 0 16 | | 4.68 557 | 4.68 558 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
|------|----------|------|------|------|------|------|------|-------|----------|------|------|------|------|------|-----|
| 100 | 00 000 | 043 | 087 | 130 | 173 | 217 | 260 | 303 | 346 | 389 | 44 | 43 | 42 | | |
| 101 | 432 | 475 | 518 | 561 | 604 | 647 | 689 | 732 | 775 | 817 | 1 | 4.4 | 4.3 | 4.2 | |
| 102 | 800 | 903 | 945 | 988 | *030 | *072 | *115 | *157 | *199 | *242 | 2 | 8.8 | 8.6 | 8.4 | |
| 103 | 01 284 | 326 | 368 | 410 | 452 | 494 | 536 | 578 | 620 | 662 | 3 | 13.2 | 12.9 | 12.6 | |
| 104 | 703 | 745 | 787 | 828 | 870 | 912 | 953 | 995 | *036 | *078 | 4 | 17.6 | 17.2 | 16.8 | |
| 105 | 02 119 | 160 | 202 | 243 | 284 | 325 | 366 | 407 | 449 | 490 | 5 | 22.0 | 21.5 | 21.0 | |
| 106 | 531 | 572 | 612 | 653 | 694 | 735 | 776 | 816 | 857 | 898 | 6 | 26.4 | 25.8 | 25.2 | |
| 107 | 938 | 979 | *019 | *060 | *100 | *141 | *181 | *222 | *262 | *302 | 7 | 30.8 | 30.1 | 29.4 | |
| 108 | 03 342 | 383 | 423 | 463 | 503 | 543 | 583 | 623 | 663 | 703 | 8 | 35.2 | 34.4 | 33.6 | |
| 109 | 743 | 782 | 822 | 862 | 902 | 941 | 981 | *021 | *060 | *100 | 9 | 39.6 | 38.7 | 37.8 | |
| 110 | 04 139 | 179 | 218 | 258 | 297 | 336 | 376 | 415 | 454 | 493 | 41 | 40 | 39 | | |
| 111 | 532 | 571 | 610 | 650 | 689 | 727 | 766 | 805 | 844 | 883 | 1 | 4.1 | 4.0 | 3.9 | |
| 112 | 922 | 961 | 999 | *038 | *077 | *115 | *154 | *192 | *231 | *269 | 2 | 8.2 | 8.0 | 7.8 | |
| 113 | 05 308 | 346 | 385 | 423 | 461 | 500 | 538 | 576 | 614 | 652 | 3 | 12.3 | 12.0 | 11.7 | |
| 114 | 690 | 729 | 767 | 805 | 843 | 881 | 918 | 956 | 994 | *032 | 4 | 16.4 | 16.0 | 15.6 | |
| 115 | 06 070 | 108 | 145 | 183 | 221 | 258 | 296 | 333 | 371 | 408 | 5 | 20.5 | 20.0 | 19.5 | |
| 116 | 446 | 483 | 521 | 558 | 595 | 633 | 670 | 707 | 744 | 781 | 6 | 24.6 | 24.0 | 23.4 | |
| 117 | 819 | 856 | 893 | 930 | 967 | *004 | *041 | *078 | *115 | *151 | 7 | 28.7 | 28.0 | 27.3 | |
| 118 | 07 188 | 225 | 262 | 298 | 335 | 372 | 408 | 445 | 482 | 518 | 8 | 32.8 | 32.0 | 31.2 | |
| 119 | 555 | 591 | 628 | 664 | 700 | 737 | 773 | 809 | 846 | 882 | 9 | 36.9 | 36.0 | 35.1 | |
| 120 | 918 | 954 | 990 | *027 | *063 | *099 | *135 | *171 | *207 | *243 | 38 | 37 | 36 | | |
| 121 | 08 279 | 314 | 350 | 386 | 422 | 458 | 493 | 529 | 565 | 600 | 1 | 3.8 | 3.7 | 3.6 | |
| 122 | 636 | 672 | 707 | 743 | 778 | 814 | 849 | 884 | 920 | 955 | 2 | 7.6 | 7.4 | 7.2 | |
| 123 | 991 | *026 | *061 | *096 | *132 | *167 | *202 | *237 | *272 | *307 | 3 | 11.4 | 11.1 | 10.8 | |
| 124 | 09 342 | 377 | 412 | 447 | 482 | 517 | 552 | 587 | 621 | 656 | 4 | 15.2 | 14.8 | 14.4 | |
| 125 | 691 | 726 | 760 | 795 | 830 | 864 | 899 | 934 | 968 | *003 | 5 | 19.0 | 18.5 | 18.0 | |
| 126 | 10 037 | 072 | 106 | 140 | 175 | 209 | 243 | 278 | 312 | 346 | 6 | 22.8 | 22.2 | 21.6 | |
| 127 | 380 | 415 | 449 | 483 | 517 | 551 | 585 | 619 | 653 | 687 | 7 | 26.6 | 25.9 | 25.2 | |
| 128 | 721 | 755 | 789 | 823 | 857 | 890 | 924 | 958 | 992 | *025 | 8 | 30.4 | 29.6 | 28.8 | |
| 129 | 11 059 | 093 | 126 | 160 | 193 | 227 | 261 | 294 | 327 | 361 | 9 | 34.2 | 33.3 | 32.4 | |
| 130 | 394 | 428 | 461 | 494 | 528 | 561 | 594 | 628 | 661 | 694 | 35 | 34 | 33 | | |
| 131 | 727 | 760 | 793 | 826 | 860 | 893 | 926 | 959 | 992 | *024 | 1 | 3.5 | 3.4 | 3.3 | |
| 132 | 12 057 | 090 | 123 | 156 | 189 | 222 | 254 | 287 | 320 | 352 | 2 | 7.0 | 6.8 | 6.6 | |
| 133 | 385 | 418 | 450 | 483 | 516 | 548 | 581 | 613 | 646 | 678 | 3 | 10.5 | 10.2 | 9.9 | |
| 134 | 710 | 743 | 775 | 808 | 840 | 872 | 905 | 937 | 969 | *001 | 4 | 14.0 | 13.6 | 13.2 | |
| 135 | 13 033 | 066 | 098 | 130 | 162 | 194 | 226 | 258 | 290 | 322 | 5 | 17.5 | 17.0 | 16.5 | |
| 136 | 354 | 386 | 418 | 450 | 481 | 513 | 545 | 577 | 609 | 640 | 6 | 21.0 | 20.4 | 19.8 | |
| 137 | 672 | 704 | 735 | 767 | 799 | 830 | 862 | 893 | 925 | 956 | 7 | 24.5 | 23.8 | 23.1 | |
| 138 | 988 | *019 | *051 | *082 | *114 | *145 | *176 | *208 | *239 | *270 | 8 | 28.0 | 27.2 | 26.4 | |
| 139 | 14 301 | 333 | 364 | 395 | 426 | 457 | 489 | 520 | 551 | 582 | 9 | 31.5 | 30.6 | 29.7 | |
| 140 | 613 | 644 | 675 | 706 | 737 | 768 | 799 | 829 | 860 | 891 | 32 | 31 | 30 | | |
| 141 | 922 | 953 | 983 | *014 | *045 | *076 | *106 | *137 | *168 | *198 | 1 | 3.2 | 3.1 | 3.0 | |
| 142 | 15 229 | 259 | 290 | 320 | 351 | 381 | 412 | 442 | 473 | 503 | 2 | 6.4 | 6.2 | 6.0 | |
| 143 | 534 | 564 | 594 | 625 | 655 | 685 | 715 | 746 | 776 | 806 | 3 | 9.6 | 9.3 | 9.0 | |
| 144 | 836 | 866 | 897 | 927 | 957 | 987 | *017 | *047 | *077 | *107 | 4 | 12.8 | 12.4 | 12.0 | |
| 145 | 16 137 | 167 | 197 | 227 | 256 | 286 | 316 | 346 | 376 | 406 | 5 | 16.0 | 15.5 | 15.0 | |
| 146 | 435 | 465 | 495 | 524 | 554 | 584 | 613 | 643 | 673 | 702 | 6 | 19.2 | 18.6 | 18.0 | |
| 147 | 732 | 761 | 791 | 820 | 850 | 879 | 909 | 938 | 967 | 997 | 7 | 22.4 | 21.7 | 21.0 | |
| 148 | 17 026 | 056 | 085 | 114 | 143 | 173 | 202 | 231 | 260 | 289 | 8 | 25.6 | 24.8 | 24.0 | |
| 149 | 319 | 348 | 377 | 406 | 435 | 464 | 493 | 522 | 551 | 580 | 9 | 28.8 | 27.9 | 27.0 | |
| 150 | 17 609 | 638 | 667 | 696 | 725 | 754 | 782 | 811 | 840 | 869 | | | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
| 960" | = 0° 16' | S | 4.68 | 557 | T | 4.68 | 558 | 1260" | = 0° 21' | S | 4.68 | 557 | T | 4.68 | 558 |
| 1020 | = 0° 17 | | 4.68 | 557 | | 4.68 | 558 | 1320 | = 0° 22 | | 4.68 | 557 | | 4.68 | 558 |
| 1080 | = 0° 18 | | 4.68 | 557 | | 4.68 | 558 | 1380 | = 0° 23 | | 4.68 | 557 | | 4.68 | 558 |
| 1140 | = 0° 19 | | 4.68 | 557 | | 4.68 | 558 | 1440 | = 0° 24 | | 4.68 | 557 | | 4.68 | 558 |
| 1200 | = 0° 20 | | 4.68 | 557 | | 4.68 | 558 | 1500 | = 0° 25 | | 4.68 | 557 | | 4.68 | 558 |

150—200

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|------------------|--------|-----|------|------|------|------------------|------|------|------|------|--|--|
| 150 | 17 609 | 638 | 667 | 696 | 725 | 754 | 782 | 811 | 840 | 869 | 29 28 1 2.9 2.8 2 5.8 5.6 3 8.7 8.4 4 11.6 11.2 5 14.5 14.0 6 17.4 16.8 7 20.3 19.6 8 23.2 22.4 9 26.1 25.2 | |
| 151 | 898 | 926 | 955 | 984 | *013 | *041 | *070 | *099 | *127 | *156 | | |
| 152 | 18 184 | 213 | 241 | 270 | 298 | 327 | 355 | 384 | 412 | 441 | | |
| 153 | 469 | 498 | 526 | 554 | 583 | 611 | 639 | 667 | 696 | 724 | | |
| 154 | 752 | 780 | 808 | 837 | 865 | 893 | 921 | 949 | 977 | *005 | | |
| 155 | 19 033 | 061 | 089 | 117 | 145 | 173 | 201 | 229 | 257 | 285 | | |
| 156 | 312 | 340 | 368 | 396 | 424 | 451 | 479 | 507 | 535 | 562 | | |
| 157 | 590 | 618 | 645 | 673 | 700 | 728 | 756 | 783 | 811 | 838 | | |
| 158 | 866 | 893 | 921 | 948 | 976 | *003 | *030 | *058 | *085 | *112 | | |
| 159 | 20 140 | 167 | 194 | 222 | 249 | 276 | 303 | 330 | 358 | 385 | | |
| 160 | 412 | 439 | 466 | 493 | 520 | 548 | 575 | 602 | 629 | 656 | 27 26 1 2.7 2.6 2 5.4 5.2 3 8.1 7.8 4 10.8 10.4 5 13.5 13.0 6 16.2 15.6 7 18.9 18.2 8 21.6 20.8 9 24.3 23.4 | |
| 161 | 683 | 710 | 737 | 763 | 790 | 817 | 844 | 871 | 898 | 925 | | |
| 162 | 952 | 978 | *005 | *032 | *059 | *085 | *112 | *139 | *165 | *192 | | |
| 163 | 21 219 | 245 | 272 | 299 | 325 | 352 | 378 | 405 | 431 | 458 | | |
| 164 | 484 | 511 | 537 | 564 | 590 | 617 | 643 | 669 | 696 | 722 | | |
| 165 | 748 | 775 | 801 | 827 | 854 | 880 | 906 | 932 | 958 | 985 | | |
| 166 | 22 011 | 037 | 063 | 089 | 115 | 141 | 167 | 194 | 220 | 246 | | |
| 167 | 272 | 298 | 324 | 350 | 376 | 401 | 427 | 453 | 479 | 505 | | |
| 168 | 531 | 557 | 583 | 608 | 634 | 660 | 686 | 712 | 737 | 763 | | |
| 169 | 789 | 814 | 840 | 866 | 891 | 917 | 943 | 968 | 994 | *019 | | |
| 170 | 23 045 | 070 | 096 | 121 | 147 | 172 | 198 | 223 | 249 | 274 | 25 1 2.5 2 5.0 3 7.5 4 10.0 5 12.5 6 15.0 7 17.5 8 20.0 9 22.5 | |
| 171 | 300 | 325 | 350 | 376 | 401 | 426 | 452 | 477 | 502 | 528 | | |
| 172 | 553 | 578 | 603 | 629 | 654 | 679 | 704 | 729 | 754 | 779 | | |
| 173 | 805 | 830 | 855 | 880 | 905 | 930 | 955 | 980 | *005 | *030 | | |
| 174 | 24 055 | 080 | 105 | 130 | 155 | 180 | 204 | 229 | 254 | 279 | | |
| 175 | 304 | 329 | 353 | 378 | 403 | 428 | 452 | 477 | 502 | 527 | | |
| 176 | 551 | 576 | 601 | 625 | 650 | 674 | 699 | 724 | 748 | 773 | | |
| 177 | 797 | 822 | 846 | 871 | 895 | 920 | 944 | 969 | 993 | *018 | | |
| 178 | 25 042 | 066 | 091 | 115 | 139 | 164 | 188 | 212 | 237 | 261 | | |
| 179 | 285 | 310 | 334 | 358 | 382 | 406 | 431 | 455 | 479 | 503 | | |
| 180 | 527 | 551 | 575 | 600 | 624 | 648 | 672 | 696 | 720 | 744 | 24 23 1 2.4 2.3 2 4.8 4.6 3 7.2 6.9 4 9.6 9.2 5 12.0 11.5 6 14.4 13.8 7 16.8 16.1 8 19.2 18.4 9 21.6 20.7 | |
| 181 | 768 | 792 | 816 | 840 | 864 | 888 | 912 | 935 | 959 | 983 | | |
| 182 | 26 007 | 031 | 055 | 079 | 102 | 126 | 150 | 174 | 198 | 221 | | |
| 183 | 245 | 269 | 293 | 316 | 340 | 364 | 387 | 411 | 435 | 458 | | |
| 184 | 482 | 505 | 529 | 553 | 576 | 600 | 623 | 647 | 670 | 694 | | |
| 185 | 717 | 741 | 764 | 788 | 811 | 834 | 858 | 881 | 905 | 928 | | |
| 186 | 951 | 975 | *021 | *045 | *068 | *091 | *114 | *138 | *161 | *184 | | |
| 187 | 27 184 | 207 | 231 | 254 | 277 | 300 | 323 | 346 | 370 | 393 | | |
| 188 | 416 | 439 | 462 | 485 | 508 | 531 | 554 | 577 | 600 | 623 | | |
| 189 | 646 | 669 | 692 | 715 | 738 | 761 | 784 | 807 | 830 | 852 | | |
| 190 | 875 | 898 | 921 | 944 | 967 | 989 | *012 | *035 | *058 | *081 | 22 21 1 2.2 2.1 2 4.4 4.2 3 6.6 6.3 4 8.8 8.4 5 11.0 10.5 6 13.2 12.6 7 15.4 14.7 8 17.6 16.8 9 19.8 18.9 | |
| 191 | 28 103 | 126 | 149 | 171 | 194 | 217 | 240 | 262 | 285 | 307 | | |
| 192 | 330 | 353 | 375 | 398 | 421 | 443 | 466 | 488 | 511 | 533 | | |
| 193 | 556 | 578 | 601 | 623 | 646 | 668 | 691 | 713 | 735 | 758 | | |
| 194 | 780 | 803 | 825 | 847 | 870 | 892 | 914 | 937 | 959 | 981 | | |
| 195 | 29 003 | 026 | 048 | 070 | 092 | 115 | 137 | 159 | 181 | 203 | | |
| 196 | 226 | 248 | 270 | 292 | 314 | 336 | 358 | 380 | 403 | 425 | | |
| 197 | 447 | 469 | 491 | 513 | 535 | 557 | 579 | 601 | 623 | 645 | | |
| 198 | 667 | 688 | 710 | 732 | 754 | 776 | 798 | 820 | 842 | 863 | | |
| 199 | 885 | 907 | 929 | 951 | 973 | 994 | *016 | *038 | *060 | *081 | | |
| 200 | 30 103 | 125 | 146 | 168 | 190 | 211 | 233 | 255 | 276 | 298 | P P | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
| 1500" = 0° 25' S | 4.68 | 557 | T | 4.68 | 558 | 1800" = 0° 30' S | 4.68 | 557 | T | 4.68 | 559 | |
| 1560" = 0° 26 | 4.68 | 557 | | 4.68 | 558 | 1860" = 0° 31 | 4.68 | 557 | | 4.68 | 559 | |
| 1620" = 0° 27 | 4.68 | 557 | | 4.68 | 558 | 1920" = 0° 32 | 4.68 | 557 | | 4.68 | 559 | |
| 1680" = 0° 28 | 4.68 | 557 | | 4.68 | 558 | 1980" = 0° 33 | 4.68 | 557 | | 4.68 | 559 | |
| 1740" = 0° 29 | 4.68 | 557 | | 4.68 | 559 | 2040" = 0° 34 | 4.68 | 557 | | 4.68 | 559 | |

| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | | |
|-------|-----|-----|------|------|------|------|------|------|-------|------|------|-----|-----------|-----|---|------|-----|
| 200 | 30 | 103 | 125 | 146 | 168 | 190 | 211 | 233 | 255 | 276 | 298 | 22 | 21 | | | | |
| 201 | | 320 | 341 | 363 | 384 | 406 | 428 | 449 | 471 | 492 | 514 | 1 | 2.2 2.1 | | | | |
| 202 | | 535 | 557 | 578 | 600 | 621 | 643 | 664 | 685 | 707 | 728 | 2 | 4.4 4.2 | | | | |
| 203 | | 750 | 771 | 792 | 814 | 835 | 856 | 878 | 899 | 920 | 942 | 3 | 6.6 6.3 | | | | |
| 204 | | 963 | 984 | *006 | *027 | *048 | *069 | *091 | *112 | *133 | *154 | 4 | 8.8 8.4 | | | | |
| 205 | 31 | 175 | 197 | 218 | 239 | 260 | 281 | 302 | 323 | 345 | 366 | 5 | 11.0 10.5 | | | | |
| 206 | | 387 | 408 | 429 | 450 | 471 | 492 | 513 | 534 | 555 | 576 | 6 | 13.2 12.6 | | | | |
| 207 | | 597 | 618 | 639 | 660 | 681 | 702 | 723 | 744 | 765 | 785 | 7 | 15.4 14.7 | | | | |
| 208 | | 806 | 827 | 848 | 869 | 890 | 911 | 931 | 952 | 973 | 994 | 8 | 17.6 16.8 | | | | |
| 209 | 32 | 015 | 035 | 056 | 077 | 098 | 118 | 139 | 160 | 181 | 201 | 9 | 19.8 18.9 | | | | |
| 210 | | 222 | 243 | 263 | 284 | 305 | 325 | 346 | 366 | 387 | 408 | 20 | | | | | |
| 211 | | 428 | 449 | 469 | 490 | 510 | 531 | 552 | 572 | 593 | 613 | 1 | 2.0 | | | | |
| 212 | | 634 | 654 | 675 | 695 | 715 | 736 | 756 | 777 | 797 | 818 | 2 | 4.0 | | | | |
| 213 | | 838 | 858 | 879 | 899 | 919 | 940 | 960 | 980 | *001 | *021 | 3 | 6.0 | | | | |
| 214 | 33 | 041 | 062 | 082 | 102 | 122 | 143 | 163 | 183 | 203 | 224 | 4 | 8.0 | | | | |
| 215 | | 244 | 264 | 284 | 304 | 325 | 345 | 365 | 385 | 405 | 425 | 5 | 10.0 | | | | |
| 216 | | 445 | 465 | 486 | 506 | 526 | 546 | 566 | 586 | 606 | 626 | 6 | 12.0 | | | | |
| 217 | | 646 | 666 | 686 | 706 | 726 | 746 | 766 | 786 | 806 | 826 | 7 | 14.0 | | | | |
| 218 | | 846 | 866 | 885 | 905 | 925 | 945 | 965 | 985 | *005 | *025 | 8 | 16.0 | | | | |
| 219 | 34 | 044 | 064 | 084 | 104 | 124 | 143 | 163 | 183 | 203 | 223 | 9 | 18.0 | | | | |
| 220 | | 242 | 262 | 282 | 301 | 321 | 341 | 361 | 380 | 400 | 420 | 19 | | | | | |
| 221 | | 439 | 459 | 479 | 498 | 518 | 537 | 557 | 577 | 596 | 616 | 1 | 1.9 | | | | |
| 222 | | 635 | 655 | 674 | 694 | 713 | 733 | 753 | 772 | 792 | 811 | 2 | 3.8 | | | | |
| 223 | | 830 | 850 | 869 | 889 | 908 | 928 | 947 | 967 | 986 | *005 | 3 | 5.7 | | | | |
| 224 | 35 | 025 | 044 | 064 | 083 | 102 | 122 | 141 | 160 | 180 | 199 | 4 | 7.6 | | | | |
| 225 | | 218 | 238 | 257 | 276 | 295 | 315 | 334 | 353 | 372 | 392 | 5 | 9.5 | | | | |
| 226 | | 411 | 430 | 449 | 468 | 488 | 507 | 526 | 545 | 564 | 583 | 6 | 11.4 | | | | |
| 227 | | 603 | 622 | 641 | 660 | 679 | 698 | 717 | 736 | 755 | 774 | 7 | 13.3 | | | | |
| 228 | | 793 | 813 | 832 | 851 | 870 | 889 | 908 | 927 | 946 | 965 | 8 | 15.2 | | | | |
| 229 | | 984 | *003 | *021 | *040 | *059 | *078 | *097 | *116 | *135 | *154 | 9 | 17.1 | | | | |
| 230 | 36 | 173 | 192 | 211 | 229 | 248 | 267 | 286 | 305 | 324 | 342 | 18 | | | | | |
| 231 | | 361 | 380 | 399 | 418 | 436 | 455 | 474 | 493 | 511 | 530 | 1 | 1.8 | | | | |
| 232 | | 549 | 568 | 586 | 605 | 624 | 642 | 661 | 680 | 698 | 717 | 2 | 3.6 | | | | |
| 233 | | 736 | 754 | 773 | 791 | 810 | 829 | 847 | 866 | 884 | 903 | 3 | 5.4 | | | | |
| 234 | | 922 | 940 | 959 | *977 | 996 | *014 | *033 | *051 | *070 | *088 | 4 | 7.2 | | | | |
| 235 | 37 | 107 | 125 | 144 | 162 | 181 | 199 | 218 | 236 | 254 | 273 | 5 | 9.0 | | | | |
| 236 | | 291 | 310 | 328 | 346 | 365 | 383 | 401 | 420 | 438 | 457 | 6 | 10.8 | | | | |
| 237 | | 475 | 493 | 511 | 530 | 548 | 566 | 585 | 603 | 621 | 639 | 7 | 12.6 | | | | |
| 238 | | 658 | 676 | 694 | 712 | 731 | 749 | 767 | 785 | 803 | 822 | 8 | 14.4 | | | | |
| 239 | | 840 | 858 | 876 | 894 | 912 | 931 | 949 | 967 | 985 | *003 | 9 | 16.2 | | | | |
| 240 | 38 | 021 | 039 | 057 | 075 | 093 | 112 | 130 | 148 | 166 | 184 | 17 | | | | | |
| 241 | | 202 | 220 | 238 | 256 | 274 | 292 | 310 | 328 | 346 | 364 | 1 | 1.7 | | | | |
| 242 | | 382 | 399 | 417 | 435 | 453 | 471 | 489 | 507 | 525 | 543 | 2 | 3.4 | | | | |
| 243 | | 561 | 578 | 596 | 614 | 632 | 650 | 668 | 686 | 703 | 721 | 3 | 5.1 | | | | |
| 244 | | 739 | 757 | 775 | 792 | 810 | 828 | 846 | 863 | 881 | 899 | 4 | 6.8 | | | | |
| 245 | | 917 | 934 | 952 | 970 | 987 | *005 | *023 | *041 | *058 | *076 | 5 | 8.5 | | | | |
| 246 | 39 | 094 | 111 | 129 | 146 | 164 | 182 | 199 | 217 | 235 | 252 | 6 | 10.2 | | | | |
| 247 | | 270 | 287 | 305 | 322 | 340 | 358 | 375 | 393 | 410 | 428 | 7 | 11.9 | | | | |
| 248 | | 445 | 463 | 480 | 498 | 515 | 533 | 550 | 568 | 585 | 602 | 8 | 13.6 | | | | |
| 249 | | 620 | 637 | 655 | 672 | 690 | 707 | 724 | 742 | 759 | 777 | 9 | 15.3 | | | | |
| 250 | | 794 | 811 | 829 | 846 | 863 | 881 | 898 | 915 | 933 | 950 | | | | | | |
| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | | |
| 1980" | =0° | 33' | S | 4.68 | 557 | T | 4.68 | 559 | 2280" | =0° | 38' | S | 4.68 | 557 | T | 4.68 | 559 |
| 2040 | =0 | 34 | | 4.68 | 557 | | 4.68 | 559 | 2340 | =0 | 39 | | 4.68 | 557 | | 4.68 | 550 |
| 2100 | =0 | 35 | | 4.68 | 557 | | 4.68 | 559 | 2400 | =0 | 40 | | 4.68 | 557 | | 4.68 | 559 |
| 2160 | =0 | 36 | | 4.68 | 557 | | 4.68 | 559 | 2460 | =0 | 41 | | 4.68 | 556 | | 4.68 | 560 |
| 2220 | =0 | 37 | | 4.68 | 557 | | 4.68 | 559 | 2520 | =0 | 42 | | 4.68 | 556 | | 4.68 | 560 |

250—300

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |
|------------------|--------|------|------|------|------|------------------|------|------|------|------|---|
| 250 | 39 794 | 811 | 829 | 846 | 863 | 881 | 898 | 915 | 933 | 950 | 18 1 1.8 2 3.6 3 5.4 4 7.2 5 9.0 6 10.8 7 12.6 8 14.4 9 16.2 |
| 251 | 967 | 985 | *002 | *019 | *037 | *054 | *071 | *088 | *106 | *123 | |
| 252 | 40 140 | 157 | 175 | 192 | 209 | 226 | 243 | 261 | 278 | 295 | |
| 253 | 312 | 329 | 346 | 364 | 381 | 398 | 415 | 432 | 449 | 466 | |
| 254 | 483 | 500 | 518 | 535 | 552 | 569 | 586 | 603 | 620 | 637 | |
| 255 | 654 | 671 | 688 | 705 | 722 | 739 | 756 | 773 | 790 | 807 | |
| 256 | 824 | 841 | 858 | 875 | 892 | 909 | 926 | 943 | 960 | 976 | |
| 257 | 993 | *010 | *027 | *044 | *061 | *078 | *095 | *111 | *128 | *145 | |
| 258 | 41 162 | 179 | 196 | 212 | 229 | 246 | 263 | 280 | 296 | 313 | |
| 259 | 330 | 347 | 363 | 380 | 397 | 414 | 430 | 447 | 464 | 481 | |
| 260 | 497 | 514 | 531 | 547 | 564 | 581 | 597 | 614 | 631 | 647 | 17 1 1.7 2 3.4 3 5.1 4 6.8 5 8.5 6 10.2 7 11.9 8 13.6 9 15.3 |
| 261 | 664 | 681 | 697 | 714 | 731 | 747 | 764 | 780 | 797 | 814 | |
| 262 | 830 | 847 | 863 | 880 | 896 | 913 | 929 | 946 | 963 | 979 | |
| 263 | 996 | *012 | *029 | *045 | *062 | *078 | *095 | *111 | *127 | *144 | |
| 264 | 42 160 | 177 | 193 | 210 | 226 | 243 | 259 | 275 | 292 | 308 | |
| 265 | 325 | 341 | 357 | 374 | 390 | 406 | 423 | 439 | 455 | 472 | |
| 266 | 488 | 504 | 521 | 537 | 553 | 570 | 586 | 602 | 619 | 635 | |
| 267 | 651 | 667 | 684 | 700 | 716 | 732 | 749 | 765 | 781 | 797 | |
| 268 | 813 | 830 | 846 | 862 | 878 | 894 | 911 | 927 | 943 | 959 | |
| 269 | 975 | 991 | *008 | *024 | *040 | *056 | *072 | *088 | *104 | *120 | |
| 270 | 43 136 | 152 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 16 1 1.6 2 3.2 3 4.8 4 6.4 5 8.0 6 9.6 7 11.2 8 12.8 9 14.4 |
| 271 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 | |
| 272 | 457 | 473 | 489 | 505 | 521 | 537 | 553 | 569 | 584 | 600 | |
| 273 | 616 | 632 | 648 | 664 | 680 | 696 | 712 | 727 | 743 | 759 | |
| 274 | 775 | 791 | 807 | 823 | 838 | 854 | 870 | 886 | 902 | 917 | |
| 275 | 933 | 949 | 965 | 981 | 996 | *012 | *028 | *044 | *059 | *075 | |
| 276 | 44 091 | 107 | 122 | 138 | 154 | 170 | 185 | 201 | 217 | 232 | |
| 277 | 248 | 264 | 279 | 295 | 311 | 326 | 342 | 358 | 373 | 389 | |
| 278 | 404 | 420 | 436 | 451 | 467 | 483 | 498 | 514 | 529 | 545 | |
| 279 | 560 | 576 | 592 | 607 | 623 | 638 | 654 | 669 | 685 | 700 | |
| 280 | 716 | 731 | 747 | 762 | 778 | 793 | 809 | 824 | 840 | 855 | 15 1 1.5 2 3.0 3 4.5 4 6.0 5 7.5 6 9.0 7 10.5 8 12.0 9 13.5 |
| 281 | 871 | 886 | 902 | 917 | 932 | 948 | 963 | 979 | 994 | *010 | |
| 282 | 45 025 | 040 | 056 | 071 | 086 | 102 | 117 | 133 | 148 | 163 | |
| 283 | 179 | 194 | 209 | 225 | 240 | 255 | 271 | 286 | 301 | 317 | |
| 284 | 332 | 347 | 362 | 378 | 393 | 408 | 423 | 439 | 454 | 469 | |
| 285 | 484 | 500 | 515 | 530 | 545 | 561 | 576 | 591 | 606 | 621 | |
| 286 | 637 | 652 | 667 | 682 | 697 | 712 | 728 | 743 | 758 | 773 | |
| 287 | 788 | 803 | 818 | 834 | 849 | 864 | 879 | 894 | 909 | 924 | |
| 288 | 939 | 954 | 969 | 984 | *000 | *015 | *030 | *045 | *060 | *075 | |
| 289 | 46 090 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | |
| 290 | 240 | 255 | 270 | 285 | 300 | 315 | 330 | 345 | 359 | 374 | 14 1 1.4 2 2.8 3 4.2 4 5.6 5 7.0 6 8.4 7 9.8 8 11.2 9 12.6 |
| 291 | 389 | 404 | 419 | 434 | 449 | 464 | 479 | 494 | 509 | 523 | |
| 292 | 538 | 553 | 568 | 583 | 598 | 613 | 627 | 642 | 657 | 672 | |
| 293 | 687 | 702 | 716 | 731 | 746 | 761 | 776 | 790 | 805 | 820 | |
| 294 | 835 | 850 | 864 | 879 | 894 | 909 | 923 | 938 | 953 | 967 | |
| 295 | 982 | 997 | *012 | *026 | *041 | *056 | *070 | *085 | *100 | *114 | |
| 296 | 47 129 | 144 | 159 | 173 | 188 | 202 | 217 | 232 | 246 | 261 | |
| 297 | 276 | 290 | 305 | 319 | 334 | 349 | 363 | 378 | 392 | 407 | |
| 298 | 422 | 436 | 451 | 465 | 480 | 494 | 509 | 524 | 538 | 553 | |
| 299 | 567 | 582 | 596 | 611 | 625 | 640 | 654 | 669 | 683 | 698 | |
| 300 | 712 | 727 | 741 | 756 | 770 | 784 | 799 | 813 | 828 | 842 | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |
| 2460" = 0° 41' S | 4.68 | 556 | T | 4.68 | 560 | 2760" = 0° 46' S | 4.68 | 556 | T | 4.68 | 560 |
| 2520 = 0 42 | 4.68 | 556 | | 4.68 | 560 | 2820 = 0 47 | 4.68 | 556 | | 4.68 | 560 |
| 2580 = 0 43 | 4.68 | 556 | | 4.68 | 560 | 2880 = 0 48 | 4.68 | 556 | | 4.68 | 560 |
| 2640 = 0 44 | 4.68 | 556 | | 4.68 | 560 | 2940 = 0 49 | 4.68 | 556 | | 4.68 | 560 |
| 2700 = 0 45 | 4.68 | 556 | | 4.68 | 560 | 3000 = 0 50 | 4.68 | 556 | | 4.68 | 561 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|-----------------|--------|------|------|------|------|-----------------|------|------|------|------|-----|---|
| 300 | 47 712 | 727 | 741 | 756 | 770 | 784 | 799 | 813 | 828 | 842 | 15 | 1 |
| 301 | 857 | 871 | 885 | 900 | 914 | 929 | 943 | 958 | 972 | 986 | | |
| 302 | 48 001 | 015 | 029 | 044 | 058 | 073 | 087 | 101 | 116 | 130 | | |
| 303 | 144 | 159 | 173 | 187 | 202 | 216 | 230 | 244 | 259 | 273 | | |
| 304 | 287 | 302 | 316 | 330 | 344 | 359 | 373 | 387 | 401 | 416 | | |
| 305 | 430 | 444 | 458 | 473 | 487 | 501 | 515 | 530 | 544 | 558 | | |
| 306 | 572 | 586 | 601 | 615 | 629 | 643 | 657 | 671 | 686 | 700 | | |
| 307 | 714 | 728 | 742 | 756 | 770 | 785 | 799 | 813 | 827 | 841 | | |
| 308 | 855 | 869 | 883 | 897 | 911 | 926 | 940 | 954 | 968 | 982 | | |
| 309 | 996 | *010 | *024 | *038 | *052 | *066 | *080 | *094 | *108 | *122 | | |
| 310 | 49 136 | 150 | 164 | 178 | 192 | 206 | 220 | 234 | 248 | 262 | 14 | 2 |
| 311 | 276 | 290 | 304 | 318 | 332 | 346 | 360 | 374 | 388 | 402 | | |
| 312 | 415 | 429 | 443 | 457 | 471 | 485 | 499 | 513 | 527 | 541 | | |
| 313 | 554 | 568 | 582 | 596 | 610 | 624 | 638 | 651 | 665 | 679 | | |
| 314 | 693 | 707 | 721 | 734 | 748 | 762 | 776 | 790 | 803 | 817 | | |
| 315 | 831 | 845 | 859 | 872 | 886 | 900 | 914 | 927 | 941 | 955 | | |
| 316 | 969 | 982 | 996 | *010 | *024 | *037 | *051 | *065 | *079 | *092 | | |
| 317 | 50 106 | 120 | 133 | 147 | 161 | 174 | 188 | 202 | 215 | 229 | | |
| 318 | 243 | 256 | 270 | 284 | 297 | 311 | 325 | 338 | 352 | 365 | | |
| 319 | 379 | 393 | 406 | 420 | 433 | 447 | 461 | 474 | 488 | 501 | | |
| 320 | 515 | 529 | 542 | 556 | 569 | 583 | 596 | 610 | 623 | 637 | 13 | 3 |
| 321 | 651 | 664 | 678 | 691 | 705 | 718 | 732 | 745 | 759 | 772 | | |
| 322 | 786 | 799 | 813 | 826 | 840 | 853 | 866 | 880 | 893 | 907 | | |
| 323 | 920 | 934 | 947 | 961 | 974 | 987 | *001 | *014 | *028 | *041 | | |
| 324 | 51 055 | 068 | 081 | 095 | 108 | 121 | 135 | 148 | 162 | 175 | | |
| 325 | 188 | 202 | 215 | 228 | 242 | 255 | 268 | 282 | 295 | 308 | | |
| 326 | 322 | 335 | 348 | 362 | 375 | 388 | 402 | 415 | 428 | 441 | | |
| 327 | 455 | 468 | 481 | 495 | 508 | 521 | 534 | 548 | 561 | 574 | | |
| 328 | 587 | 601 | 614 | 627 | 640 | 654 | 667 | 680 | 693 | 706 | | |
| 329 | 720 | 733 | 746 | 759 | 772 | 786 | 799 | 812 | 825 | 838 | | |
| 330 | 851 | 865 | 878 | 891 | 904 | 917 | 930 | 943 | 957 | 970 | 12 | 4 |
| 331 | 983 | 996 | *009 | *022 | *035 | *048 | *061 | *075 | *088 | *101 | | |
| 332 | 52 114 | 127 | 140 | 153 | 166 | 179 | 192 | 205 | 218 | 231 | | |
| 333 | 244 | 257 | 270 | 284 | 297 | 310 | 323 | 336 | 349 | 362 | | |
| 334 | 375 | 388 | 401 | 414 | 427 | 440 | 453 | 466 | 479 | 492 | | |
| 335 | 504 | 517 | 530 | 543 | 556 | 569 | 582 | 595 | 608 | 621 | | |
| 336 | 634 | 647 | 660 | 673 | 686 | 699 | 711 | 724 | 737 | 750 | | |
| 337 | 763 | 776 | 789 | 802 | 815 | 827 | 840 | 853 | 866 | 879 | | |
| 338 | 892 | 905 | 917 | 930 | 943 | 956 | 969 | 982 | 994 | *007 | | |
| 339 | 53 020 | 033 | 046 | 058 | 071 | 084 | 097 | 110 | 122 | 135 | | |
| 340 | 148 | 161 | 173 | 186 | 199 | 212 | 224 | 237 | 250 | 263 | 11 | 5 |
| 341 | 275 | 288 | 301 | 314 | 326 | 339 | 352 | 364 | 377 | 390 | | |
| 342 | 403 | 415 | 428 | 441 | 453 | 466 | 479 | 491 | 504 | 517 | | |
| 343 | 529 | 542 | 555 | 567 | 580 | 593 | 605 | 618 | 631 | 643 | | |
| 344 | 656 | 668 | 681 | 694 | 706 | 719 | 732 | 744 | 757 | 769 | | |
| 345 | 782 | 794 | 807 | 820 | 832 | 845 | 857 | 870 | 882 | 895 | | |
| 346 | 908 | 920 | 933 | 945 | 958 | 970 | 983 | 995 | *008 | *020 | | |
| 347 | 54 033 | 045 | 058 | 070 | 083 | 095 | 108 | 120 | 133 | 145 | | |
| 348 | 158 | 170 | 183 | 195 | 208 | 220 | 233 | 245 | 258 | 270 | | |
| 349 | 283 | 295 | 307 | 320 | 332 | 345 | 357 | 370 | 382 | 394 | | |
| 350 | 497 | 419 | 432 | 444 | 456 | 469 | 481 | 494 | 506 | 518 | P P | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
| 3000' = 0 50' S | 4.68 | 556 | T | 4.68 | 561 | 3300' = 0 55' S | 4.68 | 556 | T | 4.68 | 561 | |
| 3060' = 0 51 | 4.68 | 556 | | 4.68 | 561 | 3360' = 0 56 | 4.68 | 556 | | 4.68 | 561 | |
| 3120' = 0 52 | 4.68 | 556 | | 4.68 | 561 | 3420' = 0 57 | 4.68 | 555 | | 4.68 | 561 | |
| 3180' = 0 53 | 4.68 | 556 | | 4.68 | 561 | 3480' = 0 58 | 4.68 | 555 | | 4.68 | 562 | |
| 3240' = 0 54 | 4.68 | 556 | | 4.68 | 561 | 3540' = 0 59 | 4.68 | 555 | | 4.68 | 562 | |

350—400

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|------------------|--------|------|------|------|------|------|-----------------|------|------|------|--|-----|
| 350 | 54 407 | 419 | 432 | 444 | 456 | 469 | 481 | 494 | 506 | 518 | <div>13</div> <div>1 1.3</div> <div>2 2.6</div> <div>3 3.9</div> <div>4 5.2</div> <div>5 6.5</div> <div>6 7.8</div> <div>7 9.1</div> <div>8 10.4</div> <div>9 11.7</div> | |
| 351 | 531 | 543 | 555 | 568 | 580 | 593 | 605 | 617 | 630 | 642 | | |
| 352 | 654 | 667 | 679 | 691 | 704 | 716 | 728 | 741 | 753 | 765 | | |
| 353 | 777 | 790 | 802 | 814 | 827 | 839 | 851 | 864 | 876 | 888 | | |
| 354 | 900 | 913 | 925 | 937 | 949 | 962 | 974 | 986 | 998 | *011 | | |
| 355 | 55 023 | 035 | 047 | 060 | 072 | 084 | 096 | 108 | 121 | 133 | | |
| 356 | 145 | 157 | 169 | 182 | 194 | 206 | 218 | 230 | 242 | 255 | | |
| 357 | 267 | 279 | 291 | 303 | 315 | 328 | 340 | 352 | 364 | 376 | | |
| 358 | 388 | 400 | 413 | 425 | 437 | 449 | 461 | 473 | 485 | 497 | | |
| 359 | 509 | 522 | 534 | 546 | 558 | 570 | 582 | 594 | 606 | 618 | | |
| 360 | 630 | 642 | 654 | 666 | 678 | 691 | 703 | 715 | 727 | 739 | | |
| 361 | 751 | 763 | 775 | 787 | 799 | 811 | 823 | 835 | 847 | 859 | | |
| 362 | 871 | 883 | 895 | 907 | 919 | 931 | 943 | 955 | 967 | 979 | | |
| 363 | 991 | *003 | *015 | *027 | *038 | *050 | *062 | *074 | *086 | *098 | | |
| 364 | 56 110 | 122 | 134 | 146 | 158 | 170 | 182 | 194 | 205 | 217 | <div>12</div> <div>1 1.2</div> <div>2 2.4</div> <div>3 3.6</div> <div>4 4.8</div> <div>5 6.0</div> <div>6 7.2</div> <div>7 8.4</div> <div>8 9.6</div> <div>9 10.8</div> | |
| 365 | 229 | 241 | 253 | 265 | 277 | 289 | 301 | 312 | 324 | 336 | | |
| 366 | 348 | 360 | 372 | 384 | 396 | 407 | 419 | 431 | 443 | 455 | | |
| 367 | 467 | 478 | 490 | 502 | 514 | 526 | 538 | 549 | 561 | 573 | | |
| 368 | 585 | 597 | 608 | 620 | 632 | 644 | 656 | 667 | 679 | 691 | | |
| 369 | 703 | 714 | 726 | 738 | 750 | 761 | 773 | 785 | 797 | 808 | | |
| 370 | 820 | 832 | 844 | 855 | 867 | 879 | 891 | 902 | 914 | 926 | | |
| 371 | 937 | 949 | 961 | 972 | 984 | 996 | *008 | *019 | *031 | *043 | | |
| 372 | 57 054 | 066 | 078 | 089 | 101 | 113 | 124 | 136 | 148 | 159 | | |
| 373 | 171 | 183 | 194 | 206 | 217 | 229 | 241 | 252 | 264 | 276 | | |
| 374 | 287 | 299 | 310 | 322 | 334 | 345 | 357 | 368 | 380 | 392 | | |
| 375 | 403 | 415 | 426 | 438 | 449 | 461 | 473 | 484 | 496 | 507 | | |
| 376 | 519 | 530 | 542 | 553 | 565 | 576 | 588 | 600 | 611 | 623 | | |
| 377 | 634 | 646 | 657 | 669 | 680 | 692 | 703 | 715 | 726 | 738 | | |
| 378 | 749 | 761 | 772 | 784 | 795 | 807 | 818 | 830 | 841 | 852 | <div>11</div> <div>1 1.1</div> <div>2 2.2</div> <div>3 3.3</div> <div>4 4.4</div> <div>5 5.5</div> <div>6 6.6</div> <div>7 7.7</div> <div>8 8.8</div> <div>9 9.9</div> | |
| 379 | 864 | 875 | 887 | 898 | 910 | 921 | 933 | 944 | 955 | 967 | | |
| 380 | 978 | 990 | *001 | *013 | *024 | *035 | *047 | *058 | *070 | *081 | | |
| 381 | 58 092 | 104 | 115 | 127 | 138 | 149 | 161 | 172 | 184 | 195 | | |
| 382 | 206 | 218 | 229 | 240 | 252 | 263 | 274 | 286 | 297 | 309 | | |
| 383 | 320 | 331 | 343 | 354 | 365 | 377 | 388 | 399 | 410 | 422 | | |
| 384 | 433 | 444 | 456 | 467 | 478 | 490 | 501 | 512 | 524 | 535 | | |
| 385 | 546 | 557 | 569 | 580 | 591 | 602 | 614 | 625 | 636 | 647 | | |
| 386 | 659 | 670 | 681 | 692 | 704 | 715 | 726 | 737 | 749 | 760 | | |
| 387 | 771 | 782 | 794 | 805 | 816 | 827 | 838 | 850 | 861 | 872 | | |
| 388 | 883 | 894 | 906 | 917 | 928 | 939 | 950 | 961 | 973 | 984 | | |
| 389 | 995 | *006 | *017 | *028 | *040 | *051 | *062 | *073 | *084 | *095 | | |
| 390 | 59 106 | 118 | 129 | 140 | 151 | 162 | 173 | 184 | 195 | 207 | <div>10</div> <div>1 1.0</div> <div>2 2.0</div> <div>3 3.0</div> <div>4 4.0</div> <div>5 5.0</div> <div>6 6.0</div> <div>7 7.0</div> <div>8 8.0</div> <div>9 9.0</div> | |
| 391 | 218 | 229 | 240 | 251 | 262 | 273 | 284 | 295 | 306 | 318 | | |
| 392 | 329 | 340 | 351 | 362 | 373 | 384 | 395 | 406 | 417 | 428 | | |
| 393 | 439 | 450 | 461 | 472 | 483 | 494 | 506 | 517 | 528 | 539 | | |
| 394 | 550 | 561 | 572 | 583 | 594 | 605 | 616 | 627 | 638 | 649 | | |
| 395 | 660 | 671 | 682 | 693 | 704 | 715 | 726 | 737 | 748 | 759 | | |
| 396 | 770 | 780 | 791 | 802 | 813 | 824 | 835 | 846 | 857 | 868 | | |
| 397 | 879 | 890 | 901 | 912 | 923 | 934 | 945 | 956 | 967 | 977 | | |
| 398 | 988 | 999 | *010 | *021 | *032 | *043 | *054 | *065 | *076 | *086 | | |
| 399 | 60 097 | 108 | 119 | 130 | 141 | 152 | 163 | 173 | 184 | 195 | | |
| 400 | 206 | 217 | 228 | 239 | 249 | 260 | 271 | 282 | 293 | 304 | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
| 3480" = 0° 58' S | | 4.68 | 555 | T | 4.68 | 562 | 3780" = 1° 3' S | 4.68 | 555 | T | 4.68 | 562 |
| 3540 = 0 59 | | 4.68 | 555 | | 4.68 | 562 | 3840 = 1 4 | 4.68 | 555 | | 4.68 | 563 |
| 3600 = 1 0 | | 4.68 | 555 | | 4.68 | 562 | 3900 = 1 5 | 4.68 | 555 | | 4.68 | 563 |
| 3660 = 1 1 | | 4.68 | 555 | | 4.68 | 562 | 3960 = 1 6 | 4.68 | 555 | | 4.68 | 563 |
| 3720 = 1 2 | | 4.68 | 555 | | 4.68 | 562 | 4020 = 1 7 | 4.68 | 555 | | 4.68 | 563 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
|------|--------|-----|----------|-----|----------|------|------|------|--------|------|----------|-----|----------|
| 400 | 60 206 | 217 | 228 | 239 | 249 | 260 | 271 | 282 | 293 | 304 | 11 | | |
| 401 | 314 | 325 | 336 | 347 | 358 | 369 | 379 | 390 | 401 | 412 | | | |
| 402 | 423 | 433 | 444 | 455 | 466 | 477 | 487 | 498 | 509 | 520 | | | |
| 403 | 531 | 541 | 552 | 563 | 574 | 584 | 595 | 606 | 617 | 627 | | | |
| 404 | 638 | 649 | 660 | 670 | 681 | 692 | 703 | 713 | 724 | 735 | | | |
| 405 | 746 | 756 | 767 | 778 | 788 | 799 | 810 | 821 | 831 | 842 | | | |
| 406 | 853 | 863 | 874 | 885 | 895 | 906 | 917 | 927 | 938 | 949 | | | |
| 407 | 959 | 970 | 981 | 991 | *002 | *013 | *023 | *034 | *045 | *055 | 1 | 1.1 | |
| 408 | 61 066 | 077 | 087 | 098 | 109 | 119 | 130 | 140 | 151 | 162 | 2 | 2.2 | |
| 409 | 172 | 183 | 194 | 204 | 215 | 225 | 236 | 247 | 257 | 268 | 3 | 3.3 | |
| 410 | 278 | 289 | 300 | 310 | 321 | 331 | 342 | 352 | 363 | 374 | 4 | 4.4 | |
| 411 | 384 | 395 | 405 | 416 | 426 | 437 | 448 | 458 | 469 | 479 | 5 | 5.5 | |
| 412 | 490 | 500 | 511 | 521 | 532 | 542 | 553 | 563 | 574 | 584 | 6 | 6.6 | |
| 413 | 595 | 606 | 616 | 627 | 637 | 648 | 658 | 669 | 679 | 690 | 7 | 7.7 | |
| 414 | 700 | 711 | 721 | 731 | 742 | 752 | 763 | 773 | 784 | 794 | 8 | 8.8 | |
| 415 | 805 | 815 | 826 | 836 | 847 | 857 | 868 | 878 | 888 | 899 | 9 | 9.9 | |
| 416 | 909 | 920 | 930 | 941 | 951 | 962 | 972 | 982 | 993 | *003 | 10 | | |
| 417 | 62 014 | 024 | 034 | 045 | 055 | 066 | 076 | 086 | 097 | 107 | | | |
| 418 | 118 | 128 | 138 | 149 | 159 | 170 | 180 | 190 | 201 | 211 | | | |
| 419 | 221 | 232 | 242 | 252 | 263 | 273 | 284 | 294 | 304 | 315 | | | |
| 420 | 325 | 335 | 346 | 356 | 366 | 377 | 387 | 397 | 408 | 418 | | | |
| 421 | 428 | 439 | 449 | 459 | 469 | 480 | 490 | 500 | 511 | 521 | | | |
| 422 | 531 | 542 | 552 | 562 | 572 | 583 | 593 | 603 | 613 | 624 | 1 | 1.0 | |
| 423 | 634 | 644 | 655 | 665 | 675 | 685 | 696 | 706 | 716 | 726 | 2 | 2.0 | |
| 424 | 737 | 747 | 757 | 767 | 778 | 788 | 798 | 808 | 818 | 829 | 3 | 3.0 | |
| 425 | 839 | 849 | 859 | 870 | 880 | 890 | 900 | 910 | 921 | 931 | 4 | 4.0 | |
| 426 | 941 | 951 | 961 | 972 | 982 | 992 | *002 | *012 | *022 | *033 | 5 | 5.0 | |
| 427 | 63 043 | 053 | 063 | 073 | 083 | 094 | 104 | 114 | 124 | 134 | 6 | 6.0 | |
| 428 | 144 | 155 | 165 | 175 | 185 | 195 | 205 | 215 | 225 | 236 | 7 | 7.0 | |
| 429 | 246 | 256 | 266 | 276 | 286 | 296 | 306 | 317 | 327 | 337 | 8 | 8.0 | |
| 430 | 347 | 357 | 367 | 377 | 387 | 397 | 407 | 417 | 428 | 438 | 9 | 9.0 | |
| 431 | 448 | 458 | 468 | 478 | 488 | 498 | 508 | 518 | 528 | 538 | 9 | | |
| 432 | 548 | 558 | 568 | 579 | 589 | 599 | 609 | 619 | 629 | 639 | | | |
| 433 | 649 | 659 | 669 | 679 | 689 | 699 | 709 | 719 | 729 | 739 | | | |
| 434 | 749 | 759 | 769 | 779 | 789 | 799 | 809 | 819 | 829 | 839 | | | |
| 435 | 849 | 859 | 869 | 879 | 889 | 899 | 909 | 919 | 929 | 939 | | | |
| 436 | 949 | 959 | 969 | 979 | 988 | 998 | *008 | *018 | *028 | *038 | | | |
| 437 | 64 048 | 058 | 068 | 078 | 088 | 098 | 108 | 118 | 128 | 137 | | | |
| 438 | 147 | 157 | 167 | 177 | 187 | 197 | 207 | 217 | 227 | 237 | 1 | 0.9 | |
| 439 | 246 | 256 | 266 | 276 | 286 | 296 | 306 | 316 | 326 | 335 | 2 | 1.8 | |
| 440 | 345 | 355 | 365 | 375 | 385 | 395 | 404 | 414 | 424 | 434 | 3 | 2.7 | |
| 441 | 444 | 454 | 464 | 473 | 483 | 493 | 503 | 513 | 523 | 532 | 4 | 3.6 | |
| 442 | 542 | 552 | 562 | 572 | 582 | 591 | 601 | 611 | 621 | 631 | 5 | 4.5 | |
| 443 | 640 | 650 | 660 | 670 | 680 | 689 | 699 | 709 | 719 | 729 | 6 | 5.4 | |
| 444 | 738 | 748 | 758 | 768 | 777 | 787 | 797 | 807 | 816 | 826 | 7 | 6.3 | |
| 445 | 836 | 846 | 856 | 865 | 875 | 885 | 895 | 904 | 914 | 924 | 8 | 7.2 | |
| 446 | 933 | 943 | 953 | 963 | 972 | 982 | 992 | *002 | *011 | *021 | 9 | 8.1 | |
| 447 | 65 031 | 040 | 050 | 060 | 070 | 079 | 089 | 099 | 108 | 118 | P P | | |
| 448 | 128 | 137 | 147 | 157 | 167 | 176 | 186 | 196 | 205 | 215 | | | |
| 449 | 225 | 234 | 244 | 254 | 263 | 273 | 283 | 292 | 302 | 312 | | | |
| 450 | 321 | 331 | 341 | 350 | 360 | 369 | 379 | 389 | 398 | 408 | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
| 3960 | = 1 6 | S | 4.68 555 | T | 4.68 563 | | | 4260 | = 1 11 | S | 4.68 554 | T | 4.68 564 |
| 4020 | = 1 7 | | 4.68 555 | | 4.68 563 | | | 4320 | = 1 12 | | 4.68 554 | | 4.68 564 |
| 4080 | = 1 8 | | 4.68 555 | | 4.68 563 | | | 4380 | = 1 13 | | 4.68 554 | | 4.68 564 |
| 4140 | = 1 9 | | 4.68 555 | | 4.68 563 | | | 4440 | = 1 14 | | 4.68 554 | | 4.68 564 |
| 4200 | = 1 10 | | 4.68 554 | | 4.68 563 | | | 4500 | = 1 15 | | 4.68 554 | | 4.68 564 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
|------------------|--------|------|------|------|------|------|------|------------------|------|------|---|------|-----|
| 450 | 65 321 | 331 | 341 | 350 | 360 | 369 | 379 | 389 | 398 | 408 | 10 1 1.0 2 2.0 3 3.0 4 4.0 5 5.0 6 6.0 7 7.0 8 8.0 9 9.0 | | |
| 451 | 418 | 427 | 437 | 447 | 456 | 466 | 475 | 485 | 495 | 504 | | | |
| 452 | 514 | 523 | 533 | 543 | 552 | 562 | 571 | 581 | 591 | 600 | | | |
| 453 | 610 | 619 | 629 | 639 | 648 | 658 | 667 | 677 | 686 | 696 | | | |
| 454 | 706 | 715 | 725 | 734 | 744 | 753 | 763 | 772 | 782 | 792 | | | |
| 455 | 801 | 811 | 820 | 830 | 839 | 849 | 858 | 868 | 877 | 887 | | | |
| 456 | 896 | 906 | 916 | 925 | 935 | 944 | 954 | 963 | 973 | 982 | | | |
| 457 | 992 | *001 | *011 | *020 | *030 | *039 | *049 | *058 | *068 | *077 | | | |
| 458 | 66 087 | 096 | 106 | 115 | 124 | 134 | 143 | 153 | 162 | 172 | | | |
| 459 | 181 | 191 | 200 | 210 | 219 | 229 | 238 | 247 | 257 | 266 | | | |
| 460 | 276 | 285 | 295 | 304 | 314 | 323 | 332 | 342 | 351 | 361 | 9 1 0.9 2 1.8 3 2.7 4 3.6 5 4.5 6 5.4 7 6.3 8 7.2 9 8.1 | | |
| 461 | 370 | 380 | 389 | 398 | 408 | 417 | 427 | 436 | 445 | 455 | | | |
| 462 | 464 | 474 | 483 | 492 | 502 | 511 | 521 | 530 | 539 | 549 | | | |
| 463 | 558 | 567 | 577 | 586 | 596 | 605 | 614 | 624 | 633 | 642 | | | |
| 464 | 652 | 661 | 671 | 680 | 689 | 699 | 708 | 717 | 727 | 736 | | | |
| 465 | 745 | 755 | 764 | 773 | 783 | 792 | 801 | 811 | 820 | 829 | | | |
| 466 | 839 | 848 | 857 | 867 | 876 | 885 | 894 | 904 | 913 | 922 | | | |
| 467 | 932 | 941 | 950 | 960 | 969 | 978 | 987 | 997 | *006 | *015 | | | |
| 468 | 67 025 | 034 | 043 | 052 | 062 | 071 | 080 | 089 | 099 | 108 | | | |
| 469 | 117 | 127 | 136 | 145 | 154 | 164 | 173 | 182 | 191 | 201 | | | |
| 470 | 210 | 219 | 228 | 237 | 247 | 256 | 265 | 274 | 284 | 293 | 8 1 0.8 2 1.6 3 2.4 4 3.2 5 4.0 6 4.8 7 5.6 8 6.4 9 7.2 | | |
| 471 | 302 | 311 | 321 | 330 | 339 | 348 | 357 | 367 | 376 | 385 | | | |
| 472 | 394 | 403 | 413 | 422 | 431 | 440 | 449 | 459 | 468 | 477 | | | |
| 473 | 486 | 495 | 504 | 514 | 523 | 532 | 541 | 550 | 560 | 569 | | | |
| 474 | 578 | 587 | 596 | 605 | 614 | 624 | 633 | 642 | 651 | 660 | | | |
| 475 | 669 | 679 | 688 | 697 | 706 | 715 | 724 | 733 | 742 | 752 | | | |
| 476 | 761 | 770 | 779 | 788 | 797 | 806 | 815 | 825 | 834 | 843 | | | |
| 477 | 852 | 861 | 870 | 879 | 888 | 897 | 906 | 916 | 925 | 934 | | | |
| 478 | 943 | 952 | 961 | 970 | 979 | 988 | 997 | *006 | *015 | *024 | | | |
| 479 | 68 034 | 043 | 052 | 061 | 070 | 079 | 088 | 097 | 106 | 115 | | | |
| 480 | 124 | 133 | 142 | 151 | 160 | 169 | 178 | 187 | 196 | 205 | | | |
| 481 | 215 | 224 | 233 | 242 | 251 | 260 | 269 | 278 | 287 | 296 | | | |
| 482 | 305 | 314 | 323 | 332 | 341 | 350 | 359 | 368 | 377 | 386 | | | |
| 483 | 395 | 404 | 413 | 422 | 431 | 440 | 449 | 458 | 467 | 476 | | | |
| 484 | 485 | 494 | 502 | 511 | 520 | 529 | 538 | 547 | 556 | 565 | | | |
| 485 | 574 | 583 | 592 | 601 | 610 | 619 | 628 | 637 | 646 | 655 | | | |
| 486 | 664 | 673 | 681 | 690 | 699 | 708 | 717 | 726 | 735 | 744 | | | |
| 487 | 753 | 762 | 771 | 780 | 789 | 797 | 806 | 815 | 824 | 833 | | | |
| 488 | 842 | 851 | 860 | 869 | 878 | 886 | 895 | 904 | 913 | 922 | | | |
| 489 | 931 | 940 | 949 | 958 | 966 | 975 | 984 | 993 | *002 | *011 | | | |
| 490 | 69 020 | 028 | 037 | 046 | 055 | 064 | 073 | 082 | 090 | 099 | | | |
| 491 | 108 | 117 | 126 | 135 | 144 | 152 | 161 | 170 | 179 | 188 | | | |
| 492 | 197 | 205 | 214 | 223 | 232 | 241 | 249 | 258 | 267 | 276 | | | |
| 493 | 285 | 294 | 302 | 311 | 320 | 329 | 338 | 346 | 355 | 364 | | | |
| 494 | 373 | 381 | 390 | 399 | 408 | 417 | 425 | 434 | 443 | 452 | | | |
| 495 | 461 | 469 | 478 | 487 | 496 | 504 | 513 | 522 | 531 | 539 | | | |
| 496 | 548 | 557 | 566 | 574 | 583 | 592 | 601 | 609 | 618 | 627 | | | |
| 497 | 636 | 644 | 653 | 662 | 671 | 679 | 688 | 697 | 705 | 714 | | | |
| 498 | 723 | 732 | 740 | 749 | 758 | 767 | 775 | 784 | 793 | 801 | | | |
| 499 | 810 | 819 | 827 | 836 | 845 | 854 | 862 | 871 | 880 | 888 | | | |
| 500 | 897 | 906 | 914 | 923 | 932 | 940 | 949 | 958 | 966 | 975 | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
| 4500" = 1° 15' S | | 4.68 | 554 | T | 4.68 | 564 | | 4800" = 1° 20' S | 4.68 | 554 | T | 4.68 | 565 |
| 4560 = 1 16 | | 4.68 | 554 | | 4.68 | 565 | | 4860 = 1 21 | 4.68 | 553 | | 4.68 | 566 |
| 4620 = 1 17 | | 4.68 | 554 | | 4.68 | 565 | | 4920 = 1 22 | 4.68 | 553 | | 4.68 | 566 |
| 4680 = 1 18 | | 4.68 | 554 | | 4.68 | 565 | | 4980 = 1 23 | 4.68 | 553 | | 4.68 | 566 |
| 4740 = 1 19 | | 4.68 | 554 | | 4.68 | 565 | | 5040 = 1 24 | 4.68 | 553 | | 4.68 | 566 |

| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
|-------|----------|-----|----------|------|----------|----------------|--------|----------|----------|----------|----------|---|-----|
| 500 | 69 | 897 | 906 | 914 | 923 | 932 | 940 | 949 | 958 | 966 | 975 | | |
| 501 | | 984 | 992 | *001 | *010 | *018 | *027 | *036 | *044 | *053 | *062 | | |
| 502 | 70 | 070 | 079 | 088 | 096 | 105 | 114 | 122 | 131 | 140 | 148 | | |
| 503 | | 157 | 165 | 174 | 183 | 191 | 200 | 209 | 217 | 226 | 234 | | |
| 504 | | 243 | 252 | 260 | 269 | 278 | 286 | 295 | 303 | 312 | 321 | | 9 |
| 505 | | 329 | 338 | 346 | 355 | 364 | 372 | 381 | 389 | 398 | 406 | 1 | 0.9 |
| 506 | | 415 | 424 | 432 | 441 | 449 | 458 | 467 | 475 | 484 | 492 | 2 | 1.8 |
| 507 | | 501 | 509 | 518 | 526 | 535 | 544 | 552 | 561 | 569 | 578 | 3 | 2.7 |
| 508 | | 586 | 595 | 603 | 612 | 621 | 629 | 638 | 646 | 655 | 663 | 4 | 3.6 |
| 509 | | 672 | 680 | 689 | 697 | 706 | 714 | 723 | 731 | 740 | 749 | 5 | 4.5 |
| 510 | | 757 | 766 | 774 | 783 | 791 | 800 | 808 | 817 | 825 | 834 | 6 | 5.4 |
| 511 | | 842 | 851 | 859 | 868 | 876 | 885 | 893 | 902 | 910 | 919 | 7 | 6.3 |
| 512 | | 927 | 935 | 944 | 952 | 961 | 969 | 978 | 986 | 995 | *003 | 8 | 7.2 |
| 513 | 71 | 012 | 020 | 029 | 037 | 046 | 054 | 063 | 071 | 079 | 088 | 9 | 8.1 |
| 514 | | 096 | 105 | 113 | 122 | 130 | 139 | 147 | 155 | 164 | 172 | | |
| 515 | | 181 | 189 | 198 | 206 | 214 | 223 | 231 | 240 | 248 | 257 | | |
| 516 | | 265 | 273 | 282 | 290 | 299 | 307 | 315 | 324 | 332 | 341 | | |
| 517 | | 349 | 357 | 366 | 374 | 383 | 391 | 399 | 408 | 416 | 425 | | |
| 518 | | 433 | 441 | 450 | 458 | 466 | 475 | 483 | 492 | 500 | 508 | | |
| 519 | | 517 | 525 | 533 | 542 | 550 | 559 | 567 | 575 | 584 | 592 | | |
| 520 | | 600 | 609 | 617 | 625 | 634 | 642 | 650 | 659 | 667 | 675 | | 8 |
| 521 | | 684 | 692 | 700 | 709 | 717 | 725 | 734 | 742 | 750 | 759 | 1 | 0.8 |
| 522 | | 767 | 775 | 784 | 792 | 800 | 809 | 817 | 825 | 834 | 842 | 2 | 1.6 |
| 523 | | 850 | 858 | 867 | 875 | 883 | 892 | 900 | 908 | 917 | 925 | 3 | 2.4 |
| 524 | | 933 | 941 | 950 | 958 | 966 | 975 | 983 | 991 | 999 | *008 | 4 | 3.2 |
| 525 | 72 | 016 | 024 | 032 | 041 | 049 | 057 | 066 | 074 | 082 | 090 | 5 | 4.0 |
| 526 | | 099 | 107 | 115 | 123 | 132 | 140 | 148 | 156 | 165 | 173 | 6 | 4.8 |
| 527 | | 181 | 189 | 198 | 206 | 214 | 222 | 230 | 239 | 247 | 255 | 7 | 5.6 |
| 528 | | 263 | 272 | 280 | 288 | 296 | 304 | 313 | 321 | 329 | 337 | 8 | 6.4 |
| 529 | | 346 | 354 | 362 | 370 | 378 | 387 | 395 | 403 | 411 | 419 | 9 | 7.2 |
| 530 | | 428 | 436 | 444 | 452 | 460 | 469 | 477 | 485 | 493 | 501 | | |
| 531 | | 509 | 518 | 526 | 534 | 542 | 550 | 558 | 567 | 575 | 583 | | |
| 532 | | 591 | 599 | 607 | 616 | 624 | 632 | 640 | 648 | 656 | 665 | | |
| 533 | | 673 | 681 | 689 | 697 | 705 | 713 | 722 | 730 | 738 | 746 | | |
| 534 | | 754 | 762 | 770 | 779 | 787 | 795 | 803 | 811 | 819 | 827 | | |
| 535 | | 835 | 843 | 852 | 860 | 868 | 876 | 884 | 892 | 900 | 908 | | |
| 536 | | 916 | 925 | 933 | 941 | 949 | 957 | 965 | 973 | 981 | 989 | | |
| 537 | | 997 | *006 | *014 | *022 | *030 | *038 | *046 | *054 | *062 | *070 | | 7 |
| 538 | 73 | 078 | 086 | 094 | 102 | 111 | 119 | 127 | 135 | 143 | 151 | 1 | 0.7 |
| 539 | | 159 | 167 | 175 | 183 | 191 | 199 | 207 | 215 | 223 | 231 | 2 | 1.4 |
| 540 | | 239 | 247 | 255 | 263 | 272 | 280 | 288 | 296 | 304 | 312 | 3 | 2.1 |
| 541 | | 320 | 328 | 336 | 344 | 352 | 360 | 368 | 376 | 384 | 392 | 4 | 2.8 |
| 542 | | 400 | 408 | 416 | 424 | 432 | 440 | 448 | 456 | 464 | 472 | 5 | 3.5 |
| 543 | | 480 | 488 | 496 | 504 | 512 | 520 | 528 | 536 | 544 | 552 | 6 | 4.2 |
| 544 | | 560 | 568 | 576 | 584 | 592 | 600 | 608 | 616 | 624 | 632 | 7 | 4.9 |
| 545 | | 640 | 648 | 656 | 664 | 672 | 679 | 687 | 695 | 703 | 711 | 8 | 5.6 |
| 546 | | 719 | 727 | 735 | 743 | 751 | 759 | 767 | 775 | 783 | 791 | 9 | 6.3 |
| 547 | | 799 | 807 | 815 | 823 | 830 | 838 | 846 | 854 | 862 | 870 | | |
| 548 | | 878 | 886 | 894 | 902 | 910 | 918 | 926 | 933 | 941 | 949 | | |
| 549 | | 957 | 965 | 973 | 981 | 989 | 997 | *005 | *013 | *020 | *028 | | |
| 550 | | 74 | 036 | 044 | 052 | 060 | 068 | 076 | 084 | 092 | 107 | | |
| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
| 4980" | = 1° 23' | S | 4.68 553 | T | 4.68 566 | 5280" = 1° 28' | S | 4.68 553 | T | 4.68 567 | | | |
| 5040 | = 1 24 | | 4.68 553 | | 4.68 566 | 5340 | = 1 29 | | 4.68 553 | | 4.68 567 | | |
| 5100 | = 1 25 | | 4.68 553 | | 4.68 566 | 5400 | = 1 30 | | 4.68 553 | | 4.68 567 | | |
| 5160 | = 1 26 | | 4.68 553 | | 4.68 567 | 5460 | = 1 31 | | 4.68 552 | | 4.68 568 | | |
| 5220 | = 1 27 | | 4.68 553 | | 4.68 567 | 5520 | = 1 32 | | 4.68 552 | | 4.68 568 | | |

550—600

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |
|------------------|----------|-----|----------|------------------|----------|------|----------|------|------|------|-------|
| 550 | 74 036 | 044 | 052 | 060 | 068 | 076 | 084 | 092 | 099 | 107 | |
| 551 | 115 | 123 | 131 | 139 | 147 | 155 | 162 | 170 | 178 | 186 | |
| 552 | 194 | 202 | 210 | 218 | 225 | 233 | 241 | 249 | 257 | 265 | |
| 553 | 273 | 280 | 288 | 296 | 304 | 312 | 320 | 327 | 335 | 343 | |
| 554 | 351 | 359 | 367 | 374 | 382 | 390 | 398 | 406 | 414 | 421 | |
| 555 | 429 | 437 | 445 | 453 | 461 | 468 | 476 | 484 | 492 | 500 | |
| 556 | 507 | 515 | 523 | 531 | 539 | 547 | 554 | 562 | 570 | 578 | |
| 557 | 586 | 593 | 601 | 609 | 617 | 624 | 632 | 640 | 648 | 656 | |
| 558 | 663 | 671 | 679 | 687 | 695 | 702 | 710 | 718 | 726 | 733 | |
| 559 | 741 | 749 | 757 | 764 | 772 | 780 | 788 | 796 | 803 | 811 | |
| 560 | 819 | 827 | 834 | 842 | 850 | 858 | 865 | 873 | 881 | 889 | |
| 561 | 896 | 904 | 912 | 920 | 927 | 935 | 943 | 950 | 958 | 966 | 8 |
| 562 | 974 | 981 | 989 | 997 | *005 | *012 | *020 | *028 | *035 | *043 | 1 0.8 |
| 563 | 75 051 | 059 | 066 | 074 | 082 | 089 | 097 | 105 | 113 | 120 | 2 1.6 |
| 564 | 128 | 136 | 143 | 151 | 159 | 166 | 174 | 182 | 189 | 197 | 3 2.4 |
| 565 | 205 | 213 | 220 | 228 | 236 | 243 | 251 | 259 | 266 | 274 | 4 3.2 |
| 566 | 282 | 289 | 297 | 305 | 312 | 320 | 328 | 335 | 343 | 351 | 5 4.0 |
| 567 | 358 | 366 | 374 | 381 | 389 | 397 | 404 | 412 | 420 | 427 | 6 4.8 |
| 568 | 435 | 442 | 450 | 458 | 465 | 473 | 481 | 488 | 496 | 504 | 7 5.6 |
| 569 | 511 | 519 | 526 | 534 | 542 | 549 | 557 | 565 | 572 | 580 | 8 6.4 |
| 570 | 587 | 595 | 603 | 610 | 618 | 626 | 633 | 641 | 648 | 656 | 9 7.2 |
| 571 | 664 | 671 | 679 | 686 | 694 | 702 | 709 | 717 | 724 | 732 | |
| 572 | 740 | 747 | 755 | 762 | 770 | 778 | 785 | 793 | 800 | 808 | |
| 573 | 815 | 823 | 831 | 838 | 846 | 853 | 861 | 868 | 876 | 884 | |
| 574 | 891 | 899 | 906 | 914 | 921 | 929 | 937 | 944 | 952 | 959 | |
| 575 | 967 | 974 | 982 | 989 | 997 | *005 | *012 | *020 | *027 | *035 | |
| 576 | 76 042 | 050 | 057 | 065 | 072 | 080 | 087 | 095 | 103 | 110 | |
| 577 | 118 | 125 | 133 | 140 | 148 | 155 | 163 | 170 | 178 | 185 | |
| 578 | 193 | 200 | 208 | 215 | 223 | 230 | 238 | 245 | 253 | 260 | |
| 579 | 268 | 275 | 283 | 290 | 298 | 305 | 313 | 320 | 328 | 335 | |
| 580 | 343 | 350 | 358 | 365 | 373 | 380 | 388 | 395 | 403 | 410 | 7 |
| 581 | 418 | 425 | 433 | 440 | 448 | 455 | 462 | 470 | 477 | 485 | 1 0.7 |
| 582 | 492 | 500 | 507 | 515 | 522 | 530 | 537 | 545 | 552 | 559 | 2 1.4 |
| 583 | 567 | 574 | 582 | 589 | 597 | 604 | 612 | 619 | 626 | 634 | 3 2.1 |
| 584 | 641 | 649 | 656 | 664 | 671 | 678 | 686 | 693 | 701 | 708 | 4 2.8 |
| 585 | 716 | 723 | 730 | 738 | 745 | 753 | 760 | 768 | 775 | 782 | 5 3.5 |
| 586 | 790 | 797 | 805 | 812 | 819 | 827 | 834 | 842 | 849 | 856 | 6 4.2 |
| 587 | 864 | 871 | 879 | 886 | 893 | 901 | 908 | 916 | 923 | 930 | 7 4.9 |
| 588 | 938 | 945 | 953 | 960 | 967 | 975 | 982 | 989 | 997 | *004 | 8 5.6 |
| 589 | 77 012 | 019 | 026 | 034 | 041 | 048 | 056 | 063 | 070 | 078 | 9 6.3 |
| 590 | 085 | 093 | 100 | 107 | 115 | 122 | 129 | 137 | 144 | 151 | |
| 591 | 159 | 166 | 173 | 181 | 188 | 195 | 203 | 210 | 217 | 225 | |
| 592 | 232 | 240 | 247 | 254 | 262 | 269 | 276 | 283 | 291 | 298 | |
| 593 | 305 | 313 | 320 | 327 | 335 | 342 | 349 | 357 | 364 | 371 | |
| 594 | 379 | 386 | 393 | 401 | 408 | 415 | 422 | 430 | 437 | 444 | |
| 595 | 452 | 459 | 466 | 474 | 481 | 488 | 495 | 503 | 510 | 517 | |
| 596 | 525 | 532 | 539 | 546 | 554 | 561 | 568 | 576 | 583 | 590 | |
| 597 | 597 | 605 | 612 | 619 | 627 | 634 | 641 | 648 | 656 | 663 | |
| 598 | 670 | 677 | 685 | 692 | 699 | 706 | 714 | 721 | 728 | 735 | |
| 599 | 743 | 750 | 757 | 764 | 772 | 779 | 786 | 793 | 801 | 808 | |
| 600 | 815 | 822 | 830 | 837 | 844 | 851 | 859 | 866 | 873 | 880 | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |
| 5460" = 1° 31' S | 4.68 552 | T | 4.68 568 | 5760" = 1° 36' S | 4.68 552 | T | 4.68 569 | | | | |
| 5520 = 1 32 | 4.68 552 | | 4.68 568 | 5820 = 1 37 | 4.68 552 | | 4.68 569 | | | | |
| 5580 = 1 33 | 4.68 552 | | 4.68 568 | 5880 = 1 38 | 4.68 552 | | 4.68 569 | | | | |
| 5640 = 1 34 | 4.68 552 | | 4.68 568 | 5940 = 1 39 | 4.68 551 | | 4.68 569 | | | | |
| 5700 = 1 35 | 4.68 552 | | 4.68 569 | 6000 = 1 40 | 4.68 551 | | 4.68 570 | | | | |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
|---------------|--------|------|-----|-----|------|-----|---------------|------|------|------|---|----------|
| 600 | 77 815 | 822 | 830 | 837 | 844 | 851 | 859 | 866 | 873 | 880 | | |
| 601 | 887 | 895 | 902 | 909 | 916 | 924 | 931 | 938 | 945 | 952 | | |
| 602 | 960 | 967 | 974 | 981 | 988 | 996 | *003 | *010 | *017 | *025 | | |
| 603 | 78 032 | 039 | 046 | 053 | 061 | 068 | 075 | 082 | 089 | 097 | | |
| 604 | 104 | 111 | 118 | 125 | 132 | 140 | 147 | 154 | 161 | 168 | | |
| 605 | 176 | 183 | 190 | 197 | 204 | 211 | 219 | 226 | 233 | 240 | | |
| 606 | 247 | 254 | 262 | 269 | 276 | 283 | 290 | 297 | 305 | 312 | | |
| 607 | 319 | 326 | 333 | 340 | 347 | 355 | 362 | 369 | 376 | 383 | | |
| 608 | 390 | 398 | 405 | 412 | 419 | 426 | 433 | 440 | 447 | 455 | | |
| 609 | 462 | 469 | 476 | 483 | 490 | 497 | 504 | 512 | 519 | 526 | | |
| 610 | 533 | 540 | 547 | 554 | 561 | 569 | 576 | 583 | 590 | 597 | | |
| 611 | 604 | 611 | 618 | 625 | 633 | 640 | 647 | 654 | 661 | 668 | | |
| 612 | 675 | 682 | 689 | 696 | 704 | 711 | 718 | 725 | 732 | 739 | | |
| 613 | 746 | 753 | 760 | 767 | 774 | 781 | 789 | 796 | 803 | 810 | | |
| 614 | 817 | 824 | 831 | 838 | 845 | 852 | 859 | 866 | 873 | 880 | | |
| 615 | 888 | 895 | 902 | 909 | 916 | 923 | 930 | 937 | 944 | 951 | | |
| 616 | 958 | 965 | 972 | 979 | 986 | 993 | *000 | *007 | *014 | *021 | | |
| 617 | 79 029 | 036 | 043 | 050 | 057 | 064 | 071 | 078 | 085 | 092 | | |
| 618 | 099 | 106 | 113 | 120 | 127 | 134 | 141 | 148 | 155 | 162 | | |
| 619 | 169 | 176 | 183 | 190 | 197 | 204 | 211 | 218 | 225 | 232 | | |
| 620 | 239 | 246 | 253 | 260 | 267 | 274 | 281 | 288 | 295 | 302 | | |
| 621 | 309 | 316 | 323 | 330 | 337 | 344 | 351 | 358 | 365 | 372 | | |
| 622 | 379 | 386 | 393 | 400 | 407 | 414 | 421 | 428 | 435 | 442 | | |
| 623 | 449 | 456 | 463 | 470 | 477 | 484 | 491 | 498 | 505 | 511 | | |
| 624 | 518 | 525 | 532 | 539 | 546 | 553 | 560 | 567 | 574 | 581 | | |
| 625 | 588 | 595 | 602 | 609 | 616 | 623 | 630 | 637 | 644 | 650 | | |
| 626 | 657 | 664 | 671 | 678 | 685 | 692 | 699 | 706 | 713 | 720 | | |
| 627 | 727 | 734 | 741 | 748 | 754 | 761 | 768 | 775 | 782 | 789 | | |
| 628 | 796 | 803 | 810 | 817 | 824 | 831 | 837 | 844 | 851 | 858 | | |
| 629 | 865 | 872 | 879 | 886 | 893 | 900 | 906 | 913 | 920 | 927 | | |
| 630 | 934 | 941 | 948 | 955 | 962 | 969 | 975 | 982 | 989 | 996 | | |
| 631 | 80 003 | 010 | 017 | 024 | 030 | 037 | 044 | 051 | 058 | 065 | | |
| 632 | 072 | 079 | 085 | 092 | 099 | 106 | 113 | 120 | 127 | 134 | | |
| 633 | 140 | 147 | 154 | 161 | 168 | 175 | 182 | 188 | 195 | 202 | | |
| 634 | 209 | 216 | 223 | 229 | 236 | 243 | 250 | 257 | 264 | 271 | | |
| 635 | 277 | 284 | 291 | 298 | 305 | 312 | 318 | 325 | 332 | 339 | | |
| 636 | 346 | 353 | 359 | 366 | 373 | 380 | 387 | 393 | 400 | 407 | | |
| 637 | 414 | 421 | 428 | 434 | 441 | 448 | 455 | 462 | 468 | 475 | | |
| 638 | 482 | 489 | 496 | 502 | 509 | 516 | 523 | 530 | 536 | 543 | | |
| 639 | 550 | 557 | 564 | 570 | 577 | 584 | 591 | 598 | 604 | 611 | | |
| 640 | 618 | 625 | 632 | 638 | 645 | 652 | 659 | 665 | 672 | 679 | | |
| 641 | 686 | 693 | 699 | 706 | 713 | 720 | 726 | 733 | 740 | 747 | | |
| 642 | 754 | 760 | 767 | 774 | 781 | 787 | 794 | 801 | 808 | 814 | | |
| 643 | 821 | 828 | 835 | 841 | 848 | 855 | 862 | 868 | 875 | 882 | | |
| 644 | 889 | 895 | 902 | 909 | 916 | 922 | 929 | 936 | 943 | 949 | | |
| 645 | 956 | 963 | 969 | 976 | 983 | 990 | 996 | *003 | *010 | *017 | | |
| 646 | 81 023 | 030 | 037 | 043 | 050 | 057 | 064 | 070 | 077 | 084 | | |
| 647 | 090 | 097 | 104 | 111 | 117 | 124 | 131 | 137 | 144 | 151 | | |
| 648 | 158 | 164 | 171 | 178 | 184 | 191 | 198 | 204 | 211 | 218 | | |
| 649 | 224 | 231 | 238 | 245 | 251 | 258 | 265 | 271 | 278 | 285 | | |
| 650 | 291 | 298 | 305 | 311 | 318 | 325 | 331 | 338 | 345 | 351 | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
| 6090" = 1 40' | S | 4.68 | 551 | T | 4.68 | 570 | 6300" = 1 45' | S | 4.68 | 551 | T | 4.68 571 |
| 6060" = 1 41' | | 4.68 | 551 | | 4.68 | 570 | 6360" = 1 46' | | 4.68 | 551 | | 4.68 571 |
| 6120" = 1 42' | | 4.68 | 551 | | 4.68 | 570 | 6420" = 1 47' | | 4.68 | 550 | | 4.68 572 |
| 6180" = 1 43' | | 4.68 | 551 | | 4.68 | 570 | 6480" = 1 48' | | 4.68 | 550 | | 4.68 572 |
| 6240" = 1 44' | | 4.68 | 551 | | 4.68 | 571 | 6540" = 1 49' | | 4.68 | 550 | | 4.68 572 |

650—700

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|-------|-----------|----------|------|----------|------|-------|-----------|----------|------|----------|-----|--|
| 650 | 81 291 | 298 | 305 | 311 | 318 | 325 | 331 | 338 | 345 | 351 | | |
| 651 | 358 | 365 | 371 | 378 | 385 | 391 | 398 | 405 | 411 | 418 | | |
| 652 | 425 | 431 | 438 | 445 | 451 | 458 | 465 | 471 | 478 | 485 | | |
| 653 | 491 | 498 | 505 | 511 | 518 | 525 | 531 | 538 | 544 | 551 | | |
| 654 | 558 | 564 | 571 | 578 | 584 | 591 | 598 | 604 | 611 | 617 | | |
| 655 | 624 | 631 | 637 | 644 | 651 | 657 | 664 | 671 | 677 | 684 | | |
| 656 | 690 | 697 | 704 | 710 | 717 | 723 | 730 | 737 | 743 | 750 | | |
| 657 | 757 | 763 | 770 | 776 | 783 | 790 | 796 | 803 | 809 | 816 | | |
| 658 | 823 | 829 | 836 | 842 | 849 | 856 | 862 | 869 | 875 | 882 | | |
| 659 | 889 | 895 | 902 | 908 | 915 | 921 | 928 | 935 | 941 | 947 | | |
| 660 | 954 | 961 | 968 | 974 | 981 | 987 | 994 | *000 | *007 | *014 | | |
| 661 | 82 020 | 027 | 033 | 040 | 046 | 053 | 060 | 066 | 073 | 079 | | |
| 662 | 086 | 092 | 099 | 105 | 112 | 119 | 125 | 132 | 138 | 145 | | |
| 663 | 151 | 158 | 164 | 171 | 178 | 184 | 191 | 197 | 204 | 210 | | |
| 664 | 217 | 223 | 230 | 236 | 243 | 249 | 256 | 263 | 269 | 276 | | |
| 665 | 282 | 289 | 295 | 302 | 308 | 315 | 321 | 328 | 334 | 341 | | |
| 666 | 347 | 354 | 360 | 367 | 373 | 380 | 387 | 393 | 400 | 406 | | |
| 667 | 413 | 419 | 426 | 432 | 439 | 445 | 452 | 458 | 465 | 471 | | |
| 668 | 478 | 484 | 491 | 497 | 504 | 510 | 517 | 523 | 530 | 536 | | |
| 669 | 543 | 549 | 556 | 562 | 569 | 575 | 582 | 588 | 595 | 601 | | |
| 670 | 607 | 614 | 620 | 627 | 633 | 640 | 646 | 653 | 659 | 666 | | |
| 671 | 672 | 679 | 685 | 692 | 698 | 705 | 711 | 718 | 724 | 730 | | |
| 672 | 737 | 743 | 750 | 756 | 763 | 769 | 776 | 782 | 789 | 795 | | |
| 673 | 802 | 808 | 814 | 821 | 827 | 834 | 840 | 847 | 853 | 860 | | |
| 674 | 866 | 872 | 879 | 885 | 892 | 898 | 905 | 911 | 918 | 924 | | |
| 675 | 930 | 937 | 943 | 950 | 956 | 963 | 969 | 975 | 982 | 988 | | |
| 676 | 995 | *001 | *008 | *014 | *020 | *027 | *033 | *040 | *046 | *052 | | |
| 677 | 83 059 | 065 | 072 | 078 | 085 | 091 | 097 | 104 | 110 | 117 | | |
| 678 | 123 | 129 | 136 | 142 | 149 | 155 | 161 | 168 | 174 | 181 | | |
| 679 | 187 | 193 | 200 | 206 | 213 | 219 | 225 | 232 | 238 | 245 | | |
| 680 | 251 | 257 | 264 | 270 | 276 | 283 | 289 | 296 | 302 | 308 | | |
| 681 | 315 | 321 | 327 | 334 | 340 | 347 | 353 | 359 | 366 | 372 | | |
| 682 | 378 | 385 | 391 | 398 | 404 | 410 | 417 | 423 | 429 | 436 | | |
| 683 | 442 | 448 | 455 | 461 | 467 | 474 | 480 | 487 | 493 | 499 | | |
| 684 | 506 | 512 | 518 | 525 | 531 | 537 | 544 | 550 | 556 | 563 | | |
| 685 | 569 | 575 | 582 | 588 | 594 | 601 | 607 | 613 | 620 | 626 | | |
| 686 | 632 | 639 | 645 | 651 | 658 | 664 | 670 | 677 | 683 | 689 | | |
| 687 | 696 | 702 | 708 | 715 | 721 | 727 | 734 | 740 | 746 | 753 | | |
| 688 | 759 | 765 | 771 | 778 | 784 | 790 | 797 | 803 | 809 | 816 | | |
| 689 | 822 | 828 | 835 | 841 | 847 | 853 | 860 | 866 | 872 | 879 | | |
| 690 | 885 | 891 | 897 | 904 | 910 | 916 | 923 | 929 | 935 | 942 | | |
| 691 | 948 | 954 | 960 | 967 | 973 | 979 | 985 | 992 | 998 | *004 | | |
| 692 | 84 011 | 017 | 023 | 029 | 036 | 042 | 048 | 055 | 061 | 067 | | |
| 693 | 073 | 080 | 086 | 092 | 098 | 105 | 111 | 117 | 123 | 130 | | |
| 694 | 136 | 142 | 148 | 155 | 161 | 167 | 173 | 180 | 186 | 192 | | |
| 695 | 198 | 205 | 211 | 217 | 223 | 230 | 236 | 242 | 248 | 255 | | |
| 696 | 261 | 267 | 273 | 280 | 286 | 292 | 298 | 305 | 311 | 317 | | |
| 697 | 323 | 330 | 336 | 342 | 348 | 354 | 361 | 367 | 373 | 379 | | |
| 698 | 386 | 392 | 398 | 404 | 410 | 417 | 423 | 429 | 435 | 442 | | |
| 699 | 448 | 454 | 460 | 466 | 473 | 479 | 485 | 491 | 497 | 504 | | |
| 700 | 510 | 516 | 522 | 528 | 535 | 541 | 547 | 553 | 559 | 566 | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
| 6480" | =1° 48' S | 4.68 550 | T | 4.68 572 | | 6780" | =1° 53' S | 4.68 550 | T | 4.68 573 | | |
| 6540 | =1 49 | 4.68 550 | | 4.68 572 | | 6840 | =1 54 | 4.68 550 | | 4.68 573 | | |
| 6600 | =1 50 | 4.68 550 | | 4.68 572 | | 6900 | =1 55 | 4.68 549 | | 4.68 574 | | |
| 6660 | =1 51 | 4.68 550 | | 4.68 573 | | 6960 | =1 56 | 4.68 549 | | 4.68 574 | | |
| 6720 | =1 52 | 4.68 550 | | 4.68 573 | | 7020 | =1 57 | 4.68 549 | | 4.68 574 | | |

| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
|-------|------|-----|-----|------|-----|------|------|------|-------|------|------|--|--|---|------|-----|
| 700 | 84 | 510 | 516 | 522 | 528 | 535 | 541 | 547 | 553 | 559 | 566 | 7 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3 | | | | |
| 701 | | 572 | 578 | 584 | 590 | 597 | 603 | 609 | 615 | 621 | 628 | | | | | |
| 702 | | 634 | 640 | 646 | 652 | 658 | 665 | 671 | 677 | 683 | 689 | | | | | |
| 703 | | 696 | 702 | 708 | 714 | 720 | 726 | 733 | 739 | 745 | 751 | | | | | |
| 704 | | 757 | 763 | 770 | 776 | 782 | 788 | 794 | 800 | 807 | 813 | | | | | |
| 705 | | 819 | 825 | 831 | 837 | 844 | 850 | 856 | 862 | 868 | 874 | | | | | |
| 706 | | 880 | 887 | 893 | 899 | 905 | 911 | 917 | 924 | 930 | 936 | | | | | |
| 707 | | 942 | 948 | 954 | 960 | 967 | 973 | 979 | 985 | 991 | 997 | | | | | |
| 708 | 85 | 003 | 009 | 016 | 022 | 028 | 034 | 040 | 046 | 052 | 058 | | | | | |
| 709 | | 065 | 071 | 077 | 083 | 089 | 095 | 101 | 107 | 114 | 120 | 8 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3 | | | | |
| 710 | | 126 | 132 | 138 | 144 | 150 | 156 | 163 | 169 | 175 | 181 | | | | | |
| 711 | | 187 | 193 | 199 | 205 | 211 | 217 | 224 | 230 | 236 | 242 | | | | | |
| 712 | | 248 | 254 | 260 | 266 | 272 | 278 | 285 | 291 | 297 | 303 | | | | | |
| 713 | | 309 | 315 | 321 | 327 | 333 | 339 | 345 | 352 | 358 | 364 | | | | | |
| 714 | | 370 | 376 | 382 | 388 | 394 | 400 | 406 | 412 | 418 | 425 | | | | | |
| 715 | | 431 | 437 | 443 | 449 | 455 | 461 | 467 | 473 | 479 | 485 | | | | | |
| 716 | | 491 | 497 | 503 | 509 | 516 | 522 | 528 | 534 | 540 | 546 | | | | | |
| 717 | | 552 | 558 | 564 | 570 | 576 | 582 | 588 | 594 | 600 | 606 | | | | | |
| 718 | | 612 | 618 | 625 | 631 | 637 | 643 | 649 | 655 | 661 | 667 | | | | | |
| 719 | | 673 | 679 | 685 | 691 | 697 | 703 | 709 | 715 | 721 | 727 | 9 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4 | | | | |
| 720 | | 733 | 739 | 745 | 751 | 757 | 763 | 769 | 775 | 781 | 788 | | | | | |
| 721 | | 794 | 800 | 806 | 812 | 818 | 824 | 830 | 836 | 842 | 848 | | | | | |
| 722 | | 854 | 860 | 866 | 872 | 878 | 884 | 890 | 896 | 902 | 908 | | | | | |
| 723 | | 914 | 920 | 926 | 932 | 938 | 944 | 950 | 956 | 962 | 968 | | | | | |
| 724 | | 974 | 980 | 986 | 992 | 998 | *004 | *010 | *016 | *022 | *028 | | | | | |
| 725 | 86 | 034 | 040 | 046 | 052 | 058 | 064 | 070 | 076 | 082 | 088 | | | | | |
| 726 | | 094 | 100 | 106 | 112 | 118 | 124 | 130 | 136 | 141 | 147 | | | | | |
| 727 | | 153 | 159 | 165 | 171 | 177 | 183 | 189 | 195 | 201 | 207 | | | | | |
| 728 | | 213 | 219 | 225 | 231 | 237 | 243 | 249 | 255 | 261 | 267 | | | | | |
| 729 | | 273 | 279 | 285 | 291 | 297 | 303 | 308 | 314 | 320 | 326 | 5 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5 | | | | |
| 730 | | 332 | 338 | 344 | 350 | 356 | 362 | 368 | 374 | 380 | 386 | | | | | |
| 731 | | 392 | 398 | 404 | 410 | 415 | 421 | 427 | 433 | 439 | 445 | | | | | |
| 732 | | 451 | 457 | 463 | 469 | 475 | 481 | 487 | 493 | 499 | 504 | | | | | |
| 733 | | 510 | 516 | 522 | 528 | 534 | 540 | 546 | 552 | 558 | 564 | | | | | |
| 734 | | 570 | 576 | 581 | 587 | 593 | 599 | 605 | 611 | 617 | 623 | | | | | |
| 735 | | 629 | 635 | 641 | 646 | 652 | 658 | 664 | 670 | 676 | 682 | | | | | |
| 736 | | 688 | 694 | 700 | 705 | 711 | 717 | 723 | 729 | 735 | 741 | | | | | |
| 737 | | 747 | 753 | 759 | 764 | 770 | 776 | 782 | 788 | 794 | 800 | | | | | |
| 738 | | 806 | 812 | 817 | 823 | 829 | 835 | 841 | 847 | 853 | 859 | | | | | |
| 739 | | 864 | 870 | 876 | 882 | 888 | 894 | 900 | 906 | 911 | 917 | 6 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5 | | | | |
| 740 | | 923 | 929 | 935 | 941 | 947 | 953 | 958 | 964 | 970 | 976 | | | | | |
| 741 | | 982 | 988 | 994 | 999 | *005 | *011 | *017 | *023 | *029 | *035 | | | | | |
| 742 | 87 | 040 | 046 | 052 | 058 | 064 | 070 | 075 | 081 | 087 | 093 | | | | | |
| 743 | | 099 | 105 | 111 | 116 | 122 | 128 | 134 | 140 | 146 | 151 | | | | | |
| 744 | | 157 | 163 | 169 | 175 | 181 | 186 | 192 | 198 | 204 | 210 | | | | | |
| 745 | | 216 | 221 | 227 | 233 | 239 | 245 | 251 | 256 | 262 | 268 | | | | | |
| 746 | | 274 | 280 | 286 | 291 | 297 | 303 | 309 | 315 | 320 | 326 | | | | | |
| 747 | | 332 | 338 | 344 | 349 | 355 | 361 | 367 | 373 | 379 | 384 | | | | | |
| 748 | | 390 | 396 | 402 | 408 | 413 | 419 | 425 | 431 | 437 | 442 | | | | | |
| 749 | | 448 | 454 | 460 | 466 | 471 | 477 | 483 | 489 | 495 | 500 | 7 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5 | | | | |
| 750 | | 506 | 512 | 518 | 523 | 529 | 535 | 541 | 547 | 552 | 558 | | | | | |
| N | L | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | P | P | |
| 6960" | = 1° | 56' | S | 4.68 | 549 | T | 4.68 | 574 | 7200" | = 2° | 1 | | | S | 4.68 | 549 |
| 7020 | = 1 | 57 | | 4.68 | 549 | | 4.68 | 574 | 7320 | = 2 | 2 | | | | 4.68 | 548 |
| 7080 | = 1 | 58 | | 4.68 | 549 | | 4.68 | 575 | 7380 | = 2 | 3 | | | | 4.68 | 548 |
| 7140 | = 1 | 59 | | 4.68 | 549 | | 4.68 | 575 | 7440 | = 2 | 4 | | | | 4.68 | 548 |
| 7200 | = 2 | 0 | | 4.68 | 549 | | 4.68 | 575 | 7500 | = 2 | 5 | | | | 4.68 | 548 |

750—800

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
|---------------|--------|------|-----|------|------|------|----------------|------|------|------|--|------|-----|
| 750 | 87 506 | 512 | 518 | 523 | 529 | 535 | 541 | 547 | 552 | 558 | 6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4 | | |
| 751 | 564 | 570 | 576 | 581 | 587 | 593 | 599 | 604 | 610 | 616 | | | |
| 752 | 622 | 628 | 633 | 639 | 645 | 651 | 656 | 662 | 668 | 674 | | | |
| 753 | 679 | 685 | 691 | 697 | 703 | 708 | 714 | 720 | 726 | 731 | | | |
| 754 | 737 | 743 | 749 | 754 | 760 | 766 | 772 | 777 | 783 | 789 | | | |
| 755 | 795 | 800 | 806 | 812 | 818 | 823 | 829 | 835 | 841 | 846 | | | |
| 756 | 852 | 858 | 864 | 869 | 875 | 881 | 887 | 892 | 898 | 904 | | | |
| 757 | 910 | 915 | 921 | 927 | 933 | 938 | 944 | 950 | 955 | 961 | | | |
| 758 | 967 | 973 | 978 | 984 | 990 | *001 | *007 | *013 | *018 | | | | |
| 759 | 88 024 | 030 | 036 | 041 | 047 | 053 | 058 | 064 | 070 | 076 | | | |
| 760 | 081 | 087 | 093 | 098 | 104 | 110 | 116 | 121 | 127 | 133 | 5 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5 | | |
| 761 | 138 | 144 | 150 | 156 | 161 | 167 | 173 | 178 | 184 | 190 | | | |
| 762 | 195 | 201 | 207 | 213 | 218 | 224 | 230 | 235 | 241 | 247 | | | |
| 763 | 252 | 258 | 264 | 270 | 275 | 281 | 287 | 292 | 298 | 304 | | | |
| 764 | 309 | 315 | 321 | 326 | 332 | 338 | 343 | 349 | 355 | 360 | | | |
| 765 | 366 | 372 | 377 | 383 | 389 | 395 | 400 | 406 | 412 | 417 | | | |
| 766 | 423 | 429 | 434 | 440 | 446 | 451 | 457 | 463 | 468 | 474 | | | |
| 767 | 480 | 485 | 491 | 497 | 502 | 508 | 513 | 519 | 525 | 530 | | | |
| 768 | 536 | 542 | 547 | 553 | 559 | 564 | 570 | 576 | 581 | 587 | | | |
| 769 | 593 | 598 | 604 | 610 | 615 | 621 | 627 | 632 | 638 | 643 | | | |
| 770 | 649 | 655 | 660 | 666 | 672 | 677 | 683 | 689 | 694 | 700 | 6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4 | | |
| 771 | 705 | 711 | 717 | 722 | 728 | 734 | 739 | 745 | 750 | 756 | | | |
| 772 | 762 | 767 | 773 | 779 | 784 | 790 | 795 | 801 | 807 | 812 | | | |
| 773 | 818 | 824 | 829 | 835 | 840 | 846 | 852 | 857 | 863 | 868 | | | |
| 774 | 874 | 880 | 885 | 891 | 897 | 902 | 908 | 913 | 919 | 925 | | | |
| 775 | 930 | 936 | 941 | 947 | 953 | 958 | 964 | 969 | 975 | 981 | | | |
| 776 | 986 | 992 | 997 | *003 | *009 | *014 | *020 | *025 | *031 | *037 | | | |
| 777 | 89 042 | 048 | 053 | 059 | 064 | 070 | 076 | 081 | 087 | 092 | | | |
| 778 | 098 | 104 | 109 | 115 | 120 | 126 | 131 | 137 | 143 | 148 | | | |
| 779 | 154 | 159 | 165 | 170 | 176 | 182 | 187 | 193 | 198 | 204 | | | |
| 780 | 209 | 215 | 221 | 226 | 232 | 237 | 243 | 248 | 254 | 260 | 5 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5 | | |
| 781 | 265 | 271 | 276 | 282 | 287 | 293 | 298 | 304 | 310 | 315 | | | |
| 782 | 321 | 326 | 332 | 337 | 343 | 348 | 354 | 360 | 365 | 371 | | | |
| 783 | 376 | 382 | 387 | 393 | 398 | 404 | 409 | 415 | 421 | 426 | | | |
| 784 | 432 | 437 | 443 | 448 | 454 | 459 | 465 | 470 | 476 | 481 | | | |
| 785 | 487 | 492 | 498 | 504 | 509 | 515 | 520 | 526 | 531 | 537 | | | |
| 786 | 542 | 548 | 553 | 559 | 564 | 570 | 575 | 581 | 586 | 592 | | | |
| 787 | 597 | 603 | 609 | 614 | 620 | 625 | 631 | 636 | 642 | 647 | | | |
| 788 | 653 | 658 | 664 | 669 | 675 | 680 | 686 | 691 | 697 | 702 | | | |
| 789 | 708 | 713 | 719 | 724 | 730 | 735 | 741 | 746 | 752 | 757 | | | |
| 790 | 763 | 768 | 774 | 779 | 785 | 790 | 796 | 801 | 807 | 812 | 6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4 | | |
| 791 | 818 | 823 | 829 | 834 | 840 | 845 | 851 | 856 | 862 | 867 | | | |
| 792 | 873 | 878 | 883 | 889 | 894 | 900 | 905 | 911 | 916 | 922 | | | |
| 793 | 927 | 933 | 938 | 944 | 949 | 955 | 960 | 966 | 971 | 977 | | | |
| 794 | 982 | 988 | 993 | 998 | *004 | *009 | *015 | *020 | *026 | *031 | | | |
| 795 | 90 037 | 042 | 048 | 053 | 059 | 064 | 069 | 075 | 080 | 086 | | | |
| 796 | 091 | 097 | 102 | 108 | 113 | 119 | 124 | 129 | 135 | 140 | | | |
| 797 | 146 | 151 | 157 | 162 | 168 | 173 | 179 | 184 | 189 | 195 | | | |
| 798 | 200 | 206 | 211 | 217 | 222 | 227 | 233 | 238 | 244 | 249 | | | |
| 799 | 255 | 260 | 266 | 271 | 276 | 282 | 287 | 293 | 298 | 304 | | | |
| 800 | 309 | 314 | 320 | 325 | 331 | 336 | 342 | 347 | 352 | 358 | P P | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
| 7500" = 2° 5' | S | 4.68 | 548 | T | 4.68 | 577 | 7800" = 2° 10' | S | 4.68 | 547 | T | 4.68 | 578 |
| 7560 = 2 6 | | 4.68 | 548 | | 4.68 | 577 | 7860 = 2 11 | | 4.68 | 547 | | 4.68 | 579 |
| 7620 = 2 7 | | 4.68 | 548 | | 4.68 | 577 | 7920 = 2 12 | | 4.68 | 547 | | 4.68 | 579 |
| 7680 = 2 8 | | 4.68 | 547 | | 4.68 | 578 | 7980 = 2 13 | | 4.68 | 547 | | 4.68 | 579 |
| 7740 = 2 9 | | 4.68 | 547 | | 4.68 | 578 | 8040 = 2 14 | | 4.68 | 546 | | 4.68 | 579 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
|-------|----------|-----|------|-----|-----|------|-----|-------|----------|------|------|-----|---|------|-----|
| 800 | 90 309 | 314 | 320 | 325 | 331 | 336 | 342 | 347 | 352 | 358 | | | | | |
| 801 | 363 | 369 | 374 | 380 | 385 | 390 | 396 | 401 | 407 | 412 | | | | | |
| 802 | 417 | 423 | 428 | 434 | 439 | 445 | 450 | 455 | 461 | 466 | | | | | |
| 803 | 472 | 477 | 482 | 488 | 493 | 499 | 504 | 509 | 515 | 520 | | | | | |
| 804 | 526 | 531 | 536 | 542 | 547 | 553 | 558 | 563 | 569 | 574 | | | | | |
| 805 | 580 | 585 | 590 | 596 | 601 | 607 | 612 | 617 | 623 | 628 | | | | | |
| 806 | 634 | 639 | 644 | 650 | 655 | 660 | 666 | 671 | 677 | 682 | | | | | |
| 807 | 687 | 693 | 698 | 703 | 709 | 714 | 720 | 725 | 730 | 736 | | | | | |
| 808 | 741 | 747 | 752 | 757 | 763 | 768 | 773 | 779 | 784 | 789 | | | | | |
| 809 | 795 | 800 | 806 | 811 | 816 | 822 | 827 | 832 | 838 | 843 | | | | | |
| 810 | 849 | 854 | 859 | 865 | 870 | 875 | 881 | 886 | 891 | 897 | | | | | |
| 811 | 902 | 907 | 913 | 918 | 924 | 929 | 934 | 940 | 945 | 950 | 6 | | | | |
| 812 | 956 | 961 | 966 | 972 | 977 | 982 | 988 | 993 | 998 | *004 | 1 | 0.6 | | | |
| 813 | 91 009 | 014 | 020 | 025 | 030 | 036 | 041 | 046 | 052 | 057 | 2 | 1.2 | | | |
| 814 | 062 | 068 | 073 | 078 | 084 | 089 | 094 | 100 | 105 | 110 | 3 | 1.8 | | | |
| 815 | 116 | 121 | 126 | 132 | 137 | 142 | 148 | 153 | 158 | 164 | 4 | 2.4 | | | |
| 816 | 169 | 174 | 180 | 185 | 190 | 196 | 201 | 206 | 212 | 217 | 5 | 3.0 | | | |
| 817 | 222 | 228 | 233 | 238 | 243 | 249 | 254 | 259 | 265 | 270 | 6 | 3.6 | | | |
| 818 | 275 | 281 | 286 | 291 | 297 | 302 | 307 | 312 | 318 | 323 | 7 | 4.2 | | | |
| 819 | 328 | 334 | 339 | 344 | 350 | 355 | 360 | 365 | 371 | 376 | 8 | 4.8 | | | |
| 820 | 381 | 387 | 392 | 397 | 403 | 408 | 413 | 418 | 424 | 429 | 9 | 5.4 | | | |
| 821 | 434 | 440 | 445 | 450 | 455 | 461 | 466 | 471 | 477 | 482 | | | | | |
| 822 | 487 | 492 | 498 | 503 | 508 | 514 | 519 | 524 | 529 | 535 | | | | | |
| 823 | 540 | 545 | 551 | 556 | 561 | 566 | 572 | 577 | 582 | 587 | | | | | |
| 824 | 593 | 598 | 603 | 609 | 614 | 619 | 624 | 630 | 635 | 640 | | | | | |
| 825 | 645 | 651 | 656 | 661 | 666 | 672 | 677 | 682 | 687 | 693 | | | | | |
| 826 | 698 | 703 | 709 | 714 | 719 | 724 | 730 | 735 | 740 | 745 | | | | | |
| 827 | 751 | 756 | 761 | 766 | 772 | 777 | 782 | 787 | 793 | 798 | | | | | |
| 828 | 803 | 808 | 814 | 819 | 824 | 829 | 834 | 840 | 845 | 850 | | | | | |
| 829 | 855 | 861 | 866 | 871 | 876 | 882 | 887 | 892 | 897 | 903 | | | | | |
| 830 | 908 | 913 | 918 | 924 | 929 | 934 | 939 | 944 | 950 | 955 | 5 | | | | |
| 831 | 960 | 965 | 971 | 976 | 981 | 986 | 991 | 997 | *002 | *007 | 1 | 0.5 | | | |
| 832 | 92 012 | 018 | 023 | 028 | 033 | 038 | 044 | 049 | 054 | 059 | 2 | 1.0 | | | |
| 833 | 065 | 070 | 075 | 080 | 085 | 091 | 096 | 101 | 106 | 111 | 3 | 1.5 | | | |
| 834 | 117 | 122 | 127 | 132 | 137 | 143 | 148 | 153 | 158 | 163 | 4 | 2.0 | | | |
| 835 | 169 | 174 | 179 | 184 | 189 | 195 | 200 | 205 | 210 | 215 | 5 | 2.5 | | | |
| 836 | 221 | 226 | 231 | 236 | 241 | 247 | 252 | 257 | 262 | 267 | 6 | 3.0 | | | |
| 837 | 273 | 278 | 283 | 288 | 293 | 298 | 304 | 309 | 314 | 319 | 7 | 3.5 | | | |
| 838 | 324 | 330 | 335 | 340 | 345 | 350 | 355 | 361 | 366 | 371 | 8 | 4.0 | | | |
| 839 | 376 | 381 | 387 | 392 | 397 | 402 | 407 | 412 | 418 | 423 | 9 | 4.5 | | | |
| 840 | 428 | 433 | 438 | 443 | 449 | 454 | 459 | 464 | 469 | 474 | | | | | |
| 841 | 480 | 485 | 490 | 495 | 500 | 505 | 511 | 516 | 521 | 526 | | | | | |
| 842 | 531 | 536 | 542 | 547 | 552 | 557 | 562 | 567 | 572 | 578 | | | | | |
| 843 | 583 | 588 | 593 | 598 | 603 | 609 | 614 | 619 | 624 | 629 | | | | | |
| 844 | 634 | 639 | 645 | 650 | 655 | 660 | 665 | 670 | 675 | 681 | | | | | |
| 845 | 686 | 691 | 696 | 701 | 706 | 711 | 716 | 722 | 727 | 732 | | | | | |
| 846 | 737 | 742 | 747 | 752 | 758 | 763 | 768 | 773 | 778 | 783 | | | | | |
| 847 | 788 | 793 | 799 | 804 | 809 | 814 | 819 | 824 | 829 | 834 | | | | | |
| 848 | 840 | 845 | 850 | 855 | 860 | 865 | 870 | 875 | 881 | 886 | | | | | |
| 849 | 891 | 896 | 901 | 906 | 911 | 916 | 921 | 927 | 932 | 937 | | | | | |
| 850 | 942 | 947 | 952 | 957 | 962 | 967 | 973 | 978 | 983 | 988 | | | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
| 7980" | = 2' 13' | S | 4.68 | 547 | T | 4.68 | 579 | 8280" | = 2° 18' | S | 4.68 | 546 | T | 4.68 | 581 |
| 8040 | = 2 14 | | 4.68 | 546 | | 4.68 | 579 | 8340 | = 2 19 | | 4.68 | 546 | | 4.68 | 581 |
| 8100 | = 2 15 | | 4.68 | 546 | | 4.68 | 580 | 8400 | = 2 20 | | 4.68 | 545 | | 4.68 | 582 |
| 8160 | = 2 16 | | 4.68 | 546 | | 4.68 | 580 | 8460 | = 2 21 | | 4.68 | 545 | | 4.68 | 582 |
| 8220 | = 2 17 | | 4.68 | 546 | | 4.68 | 580 | 8520 | = 2 22 | | 4.68 | 545 | | 4.68 | 582 |

850—900

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
|----------------|--------|------|------|------|------|------|----------------|------|------|------|---|----------|
| 850 | 92 942 | 947 | 952 | 957 | 962 | 967 | 973 | 978 | 983 | 988 | <div>6</div> <div>I 0.6</div> <div>2 1.2</div> <div>3 1.8</div> <div>4 2.4</div> <div>5 3.0</div> <div>6 3.6</div> <div>7 4.2</div> <div>8 4.8</div> <div>9 5.4</div> | |
| 851 | 993 | 998 | *003 | *008 | *013 | *018 | *024 | *029 | *034 | *039 | | |
| 852 | 93 044 | 049 | 054 | 059 | 064 | 069 | 075 | 080 | 085 | 090 | | |
| 853 | 095 | 100 | 105 | 110 | 115 | 120 | 125 | 131 | 136 | 141 | | |
| 854 | 146 | 151 | 156 | 161 | 166 | 171 | 176 | 181 | 186 | 192 | | |
| 855 | 197 | 202 | 207 | 212 | 217 | 222 | 227 | 232 | 237 | 242 | | |
| 856 | 247 | 252 | 258 | 263 | 268 | 273 | 278 | 283 | 288 | 293 | | |
| 857 | 298 | 303 | 308 | 313 | 318 | 323 | 328 | 334 | 339 | 344 | | |
| 858 | 349 | 354 | 359 | 364 | 369 | 374 | 379 | 384 | 389 | 394 | | |
| 859 | 399 | 404 | 409 | 414 | 420 | 425 | 430 | 435 | 440 | 445 | | |
| 860 | 450 | 455 | 460 | 465 | 470 | 475 | 480 | 485 | 490 | 495 | <div>5</div> <div>I 0.5</div> <div>2 1.0</div> <div>3 1.5</div> <div>4 2.0</div> <div>5 2.5</div> <div>6 3.0</div> <div>7 3.5</div> <div>8 4.0</div> <div>9 4.5</div> | |
| 861 | 500 | 505 | 510 | 515 | 520 | 526 | 531 | 536 | 541 | 546 | | |
| 862 | 551 | 556 | 561 | 566 | 571 | 576 | 581 | 586 | 591 | 596 | | |
| 863 | 601 | 606 | 611 | 616 | 621 | 626 | 631 | 636 | 641 | 646 | | |
| 864 | 651 | 656 | 661 | 666 | 671 | 676 | 682 | 687 | 692 | 697 | | |
| 865 | 702 | 707 | 712 | 717 | 722 | 727 | 732 | 737 | 742 | 747 | | |
| 866 | 752 | 757 | 762 | 767 | 772 | 777 | 782 | 787 | 792 | 797 | | |
| 867 | 802 | 807 | 812 | 817 | 822 | 827 | 832 | 837 | 842 | 847 | | |
| 868 | 852 | 857 | 862 | 867 | 872 | 877 | 882 | 887 | 892 | 897 | | |
| 869 | 902 | 907 | 912 | 917 | 922 | 927 | 932 | 937 | 942 | 947 | | |
| 870 | 952 | 957 | 962 | 967 | 972 | 977 | 982 | 987 | 992 | 997 | <div>4</div> <div>I 0.4</div> <div>2 0.8</div> <div>3 1.2</div> <div>4 1.6</div> <div>5 2.0</div> <div>6 2.4</div> <div>7 2.8</div> <div>8 3.2</div> <div>9 3.6</div> | |
| 871 | 94 002 | 007 | 012 | 017 | 022 | 027 | 032 | 037 | 042 | 047 | | |
| 872 | 052 | 057 | 062 | 067 | 072 | 077 | 082 | 086 | 091 | 096 | | |
| 873 | 101 | 106 | 111 | 116 | 121 | 126 | 131 | 136 | 141 | 146 | | |
| 874 | 151 | 156 | 161 | 166 | 171 | 176 | 181 | 186 | 191 | 196 | | |
| 875 | 201 | 206 | 211 | 216 | 221 | 226 | 231 | 236 | 240 | 245 | | |
| 876 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | | |
| 877 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | | |
| 878 | 349 | 354 | 359 | 364 | 369 | 374 | 379 | 384 | 389 | 394 | | |
| 879 | 399 | 404 | 409 | 414 | 419 | 424 | 429 | 433 | 438 | 443 | | |
| 880 | 448 | 453 | 458 | 463 | 468 | 473 | 478 | 483 | 488 | 493 | <div>3</div> <div>I 0.3</div> <div>2 0.6</div> <div>3 0.9</div> <div>4 1.2</div> <div>5 1.5</div> <div>6 1.8</div> <div>7 2.1</div> <div>8 2.4</div> <div>9 2.7</div> | |
| 881 | 498 | 503 | 507 | 512 | 517 | 522 | 527 | 532 | 537 | 542 | | |
| 882 | 547 | 552 | 557 | 562 | 567 | 571 | 576 | 581 | 586 | 591 | | |
| 883 | 596 | 601 | 606 | 611 | 616 | 621 | 626 | 630 | 635 | 640 | | |
| 884 | 645 | 650 | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 689 | | |
| 885 | 694 | 699 | 704 | 709 | 714 | 719 | 724 | 729 | 734 | 738 | | |
| 886 | 743 | 748 | 753 | 758 | 763 | 768 | 773 | 778 | 783 | 787 | | |
| 887 | 792 | 797 | 802 | 807 | 812 | 817 | 822 | 827 | 832 | 836 | | |
| 888 | 841 | 846 | 851 | 856 | 861 | 866 | 871 | 876 | 880 | 885 | | |
| 889 | 890 | 895 | 900 | 905 | 910 | 915 | 919 | 924 | 929 | 934 | | |
| 890 | 939 | 944 | 949 | 954 | 959 | 963 | 968 | 973 | 978 | 983 | <div>2</div> <div>I 0.2</div> <div>2 0.4</div> <div>3 0.6</div> <div>4 0.8</div> <div>5 1.0</div> <div>6 1.2</div> <div>7 1.4</div> <div>8 1.6</div> <div>9 1.8</div> | |
| 891 | 988 | 993 | 998 | *002 | *007 | *012 | *017 | *022 | *027 | *032 | | |
| 892 | 95 036 | 041 | 046 | 051 | 056 | 061 | 066 | 071 | 075 | 080 | | |
| 893 | 085 | 090 | 095 | 100 | 105 | 109 | 114 | 119 | 124 | 129 | | |
| 894 | 134 | 139 | 143 | 148 | 153 | 158 | 163 | 168 | 173 | 177 | | |
| 895 | 182 | 187 | 192 | 197 | 202 | 207 | 211 | 216 | 221 | 226 | | |
| 896 | 231 | 236 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 274 | | |
| 897 | 279 | 284 | 289 | 294 | 299 | 303 | 308 | 313 | 318 | 323 | | |
| 898 | 328 | 332 | 337 | 342 | 347 | 352 | 357 | 361 | 366 | 371 | | |
| 899 | 376 | 381 | 386 | 390 | 395 | 400 | 405 | 410 | 415 | 419 | | |
| 900 | 424 | 429 | 434 | 439 | 444 | 448 | 453 | 458 | 463 | 468 | <div>1</div> <div>I 0.1</div> <div>2 0.2</div> <div>3 0.3</div> <div>4 0.4</div> <div>5 0.5</div> <div>6 0.6</div> <div>7 0.7</div> <div>8 0.8</div> <div>9 0.9</div> | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| 8460" = 2° 21' | S | 4.68 | 545 | T | 4.68 | 582 | 8760" = 2° 26' | S | 4.68 | 544 | T | 4.68 584 |
| 8520 = 2 22 | | 4.68 | 545 | | 4.68 | 582 | 8820 = 2 27 | | 4.68 | 544 | | 4.68 584 |
| 8580 = 2 23 | | 4.68 | 545 | | 4.68 | 583 | 8880 = 2 28 | | 4.68 | 544 | | 4.68 584 |
| 8640 = 2 24 | | 4.68 | 545 | | 4.68 | 583 | 8940 = 2 29 | | 4.68 | 544 | | 4.68 585 |
| 8700 = 2 25 | | 4.68 | 545 | | 4.68 | 583 | 9000 = 2 30 | | 4.68 | 544 | | 4.68 585 |

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | |
|------------------|--------|------|------|------|------|------|------|------------------|------|------|---|---|------|-----|
| 900 | 95 424 | 429 | 434 | 439 | 444 | 448 | 453 | 458 | 463 | 468 | <div>5</div> <div>1 0.5</div> <div>2 1.0</div> <div>3 1.5</div> <div>4 2.0</div> <div>5 2.5</div> <div>6 3.0</div> <div>7 3.5</div> <div>8 4.0</div> <div>9 4.5</div> | | | |
| 901 | 472 | 477 | 482 | 487 | 492 | 497 | 501 | 506 | 511 | 516 | | | | |
| 902 | 521 | 525 | 530 | 535 | 540 | 545 | 550 | 554 | 559 | 564 | | | | |
| 903 | 569 | 574 | 578 | 583 | 588 | 593 | 598 | 602 | 607 | 612 | | | | |
| 904 | 617 | 622 | 626 | 631 | 636 | 641 | 646 | 650 | 655 | 660 | | | | |
| 905 | 665 | 670 | 674 | 679 | 684 | 689 | 694 | 698 | 703 | 708 | | | | |
| 906 | 713 | 718 | 722 | 727 | 732 | 737 | 742 | 746 | 751 | 756 | | | | |
| 907 | 761 | 766 | 770 | 775 | 780 | 785 | 789 | 794 | 799 | 804 | | | | |
| 908 | 809 | 813 | 818 | 823 | 828 | 832 | 837 | 842 | 847 | 852 | | | | |
| 909 | 856 | 861 | 866 | 871 | 875 | 880 | 885 | 890 | 895 | 899 | | | | |
| 910 | 904 | 909 | 914 | 918 | 923 | 928 | 933 | 938 | 942 | 947 | | | | |
| 911 | 952 | 957 | 961 | 966 | 971 | 976 | 980 | 985 | 990 | 995 | | | | |
| 912 | 999 | *004 | *009 | *014 | *019 | *023 | *028 | *033 | *038 | *042 | | | | |
| 913 | 96 047 | 052 | 057 | 061 | 066 | 071 | 076 | 080 | 085 | 090 | | | | |
| 914 | 095 | 099 | 104 | 109 | 114 | 118 | 123 | 128 | 133 | 137 | | | | |
| 915 | 142 | 147 | 152 | 156 | 161 | 166 | 171 | 175 | 180 | 185 | | | | |
| 916 | 190 | 194 | 199 | 204 | 209 | 213 | 218 | 223 | 227 | 232 | | | | |
| 917 | 237 | 242 | 246 | 251 | 256 | 261 | 265 | 270 | 275 | 280 | | | | |
| 918 | 284 | 289 | 294 | 298 | 303 | 308 | 313 | 317 | 322 | 327 | | | | |
| 919 | 332 | 336 | 341 | 346 | 350 | 355 | 360 | 365 | 369 | 374 | | | | |
| 920 | 379 | 384 | 388 | 393 | 398 | 402 | 407 | 412 | 417 | 421 | | | | |
| 921 | 426 | 431 | 435 | 440 | 445 | 450 | 454 | 459 | 464 | 468 | | | | |
| 922 | 473 | 478 | 483 | 487 | 492 | 497 | 501 | 506 | 511 | 515 | | | | |
| 923 | 520 | 525 | 530 | 534 | 539 | 544 | 548 | 553 | 558 | 562 | | | | |
| 924 | 567 | 572 | 577 | 581 | 586 | 591 | 595 | 600 | 605 | 609 | | | | |
| 925 | 614 | 619 | 624 | 628 | 633 | 638 | 642 | 647 | 652 | 656 | | | | |
| 926 | 661 | 666 | 670 | 675 | 680 | 685 | 689 | 694 | 699 | 703 | | | | |
| 927 | 708 | 713 | 717 | 722 | 727 | 731 | 736 | 741 | 745 | 750 | | | | |
| 928 | 755 | 759 | 764 | 769 | 774 | 778 | 783 | 788 | 792 | 797 | | | | |
| 929 | 802 | 806 | 811 | 816 | 820 | 825 | 830 | 834 | 839 | 844 | | | | |
| 930 | 848 | 853 | 858 | 862 | 867 | 872 | 876 | 881 | 886 | 890 | | | | |
| 931 | 895 | 900 | 904 | 909 | 914 | 918 | 923 | 928 | 932 | 937 | | | | |
| 932 | 942 | 946 | 951 | 956 | 960 | 965 | 970 | 974 | 979 | 984 | | | | |
| 933 | 988 | 993 | 997 | *002 | *007 | *011 | *016 | *021 | *025 | *030 | | | | |
| 934 | 97 035 | 039 | 044 | 049 | 053 | 058 | 063 | 067 | 072 | 077 | | | | |
| 935 | 081 | 086 | 090 | 095 | 100 | 104 | 109 | 114 | 118 | 123 | | | | |
| 936 | 128 | 132 | 137 | 142 | 146 | 151 | 155 | 160 | 165 | 169 | | | | |
| 937 | 174 | 179 | 183 | 188 | 192 | 197 | 202 | 206 | 211 | 216 | | | | |
| 938 | 220 | 225 | 230 | 234 | 239 | 243 | 248 | 253 | 257 | 262 | | | | |
| 939 | 267 | 271 | 276 | 280 | 285 | 290 | 294 | 299 | 304 | 308 | | | | |
| 940 | 313 | 317 | 322 | 327 | 331 | 336 | 340 | 345 | 350 | 354 | | | | |
| 941 | 359 | 364 | 368 | 373 | 377 | 382 | 387 | 391 | 396 | 400 | | | | |
| 942 | 405 | 410 | 414 | 419 | 424 | 428 | 433 | 437 | 442 | 447 | | | | |
| 943 | 451 | 456 | 460 | 465 | 470 | 474 | 479 | 483 | 488 | 493 | | | | |
| 944 | 497 | 502 | 506 | 511 | 516 | 520 | 525 | 529 | 534 | 539 | | | | |
| 945 | 543 | 548 | 552 | 557 | 562 | 566 | 571 | 575 | 580 | 585 | | | | |
| 946 | 589 | 594 | 598 | 603 | 607 | 612 | 617 | 621 | 626 | 630 | | | | |
| 947 | 635 | 640 | 644 | 649 | 653 | 658 | 663 | 667 | 672 | 676 | | | | |
| 948 | 681 | 685 | 690 | 695 | 699 | 704 | 708 | 713 | 717 | 722 | | | | |
| 949 | 727 | 731 | 736 | 740 | 745 | 749 | 754 | 759 | 763 | 768 | | | | |
| 950 | 772 | 777 | 782 | 786 | 791 | 795 | 800 | 804 | 809 | 813 | | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | |
| 9000" = 2° 30' S | | | 4.68 | 544 | T | 4.68 | 585 | 9300" = 2° 35' S | | 4.68 | 543 | T | 4.68 | 587 |
| 9060 = 2° 31' | | | 4.68 | 544 | | 4.68 | 585 | 9360 = 2° 36' | | 4.68 | 543 | | 4.68 | 587 |
| 9120 = 2° 32' | | | 4.68 | 543 | | 4.68 | 586 | 9420 = 2° 37' | | 4.68 | 542 | | 4.68 | 588 |
| 9180 = 2° 33' | | | 4.68 | 543 | | 4.68 | 586 | 9480 = 2° 38' | | 4.68 | 542 | | 4.68 | 588 |
| 9240 = 2° 34' | | | 4.68 | 543 | | 4.68 | 587 | 9540 = 2° 39' | | 4.68 | 542 | | 4.68 | 588 |

950—1000

| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
|-------|-----------|------|-----|------|------|------|-------|-----------|------|------|---|------|-----|
| 950 | 97 772 | 777 | 782 | 786 | 791 | 795 | 800 | 804 | 809 | 813 | <div>5</div> <div>1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5</div> | | |
| 951 | 818 | 823 | 827 | 832 | 836 | 841 | 845 | 850 | 855 | 859 | | | |
| 952 | 864 | 868 | 873 | 877 | 882 | 886 | 891 | 896 | 900 | 905 | | | |
| 953 | 909 | 914 | 918 | 923 | 928 | 932 | 937 | 941 | 946 | 950 | | | |
| 954 | 955 | 959 | 964 | 968 | 973 | 978 | 982 | 987 | 991 | 996 | | | |
| 955 | 98 000 | 005 | 009 | 014 | 019 | 023 | 028 | 032 | 037 | 041 | | | |
| 956 | 046 | 050 | 055 | 059 | 064 | 068 | 073 | 078 | 082 | 087 | | | |
| 957 | 091 | 096 | 100 | 105 | 109 | 114 | 118 | 123 | 127 | 132 | | | |
| 958 | 137 | 141 | 146 | 150 | 155 | 159 | 164 | 168 | 173 | 177 | | | |
| 959 | 182 | 186 | 191 | 195 | 200 | 204 | 209 | 214 | 218 | 223 | | | |
| 960 | 227 | 232 | 236 | 241 | 245 | 250 | 254 | 259 | 263 | 268 | | | |
| 961 | 272 | 277 | 281 | 286 | 290 | 295 | 299 | 304 | 308 | 313 | <div>4</div> <div>1 0.4 2 0.8 3 1.2 4 1.6 5 2.0 6 2.4 7 2.8 8 3.2 9 3.6</div> | | |
| 962 | 318 | 322 | 327 | 331 | 336 | 340 | 345 | 349 | 354 | 358 | | | |
| 963 | 363 | 367 | 372 | 376 | 381 | 385 | 390 | 394 | 399 | 403 | | | |
| 964 | 408 | 412 | 417 | 421 | 426 | 430 | 435 | 439 | 444 | 448 | | | |
| 965 | 453 | 457 | 462 | 466 | 471 | 475 | 480 | 484 | 489 | 493 | | | |
| 966 | 498 | 502 | 507 | 511 | 516 | 520 | 525 | 529 | 534 | 538 | | | |
| 967 | 543 | 547 | 552 | 556 | 561 | 565 | 570 | 574 | 579 | 583 | | | |
| 968 | 588 | 592 | 597 | 601 | 605 | 610 | 614 | 619 | 623 | 628 | | | |
| 969 | 632 | 637 | 641 | 646 | 650 | 655 | 659 | 664 | 668 | 673 | | | |
| 970 | 677 | 682 | 686 | 691 | 695 | 700 | 704 | 709 | 713 | 717 | | | |
| 971 | 722 | 726 | 731 | 735 | 740 | 744 | 749 | 753 | 758 | 762 | | | |
| 972 | 767 | 771 | 776 | 780 | 784 | 789 | 793 | 798 | 802 | 807 | | | |
| 973 | 811 | 816 | 820 | 825 | 829 | 834 | 838 | 843 | 847 | 851 | | | |
| 974 | 856 | 860 | 865 | 869 | 874 | 878 | 883 | 887 | 892 | 896 | | | |
| 975 | 900 | 905 | 909 | 914 | 918 | 923 | 927 | 932 | 936 | 941 | | | |
| 976 | 945 | 949 | 954 | 958 | 963 | 967 | 972 | 976 | 981 | 985 | | | |
| 977 | 989 | 994 | 998 | *003 | *007 | *012 | *016 | *021 | *025 | *029 | | | |
| 978 | 99 034 | 038 | 043 | 047 | 052 | 056 | 061 | 065 | 069 | 074 | | | |
| 979 | 078 | 083 | 087 | 092 | 096 | 100 | 105 | 109 | 114 | 118 | | | |
| 980 | 123 | 127 | 131 | 136 | 140 | 145 | 149 | 154 | 158 | 162 | | | |
| 981 | 167 | 171 | 176 | 180 | 185 | 189 | 193 | 198 | 202 | 207 | | | |
| 982 | 211 | 216 | 220 | 224 | 229 | 233 | 238 | 242 | 247 | 251 | | | |
| 983 | 255 | 260 | 264 | 269 | 273 | 277 | 282 | 286 | 291 | 295 | | | |
| 984 | 300 | 304 | 308 | 313 | 317 | 322 | 326 | 330 | 335 | 339 | | | |
| 985 | 344 | 348 | 352 | 357 | 361 | 366 | 370 | 374 | 379 | 383 | | | |
| 986 | 388 | 392 | 396 | 401 | 405 | 410 | 414 | 419 | 423 | 427 | | | |
| 987 | 432 | 436 | 441 | 445 | 449 | 454 | 458 | 463 | 467 | 471 | | | |
| 988 | 476 | 480 | 484 | 489 | 493 | 498 | 502 | 506 | 511 | 515 | | | |
| 989 | 520 | 524 | 528 | 533 | 537 | 542 | 546 | 550 | 555 | 559 | | | |
| 990 | 564 | 568 | 572 | 577 | 581 | 585 | 590 | 594 | 599 | 603 | | | |
| 991 | 607 | 612 | 616 | 621 | 625 | 629 | 634 | 638 | 642 | 647 | | | |
| 992 | 651 | 656 | 660 | 664 | 669 | 673 | 677 | 682 | 686 | 691 | | | |
| 993 | 695 | 699 | 704 | 708 | 712 | 717 | 721 | 726 | 730 | 734 | | | |
| 994 | 739 | 743 | 747 | 752 | 756 | 760 | 765 | 769 | 774 | 778 | | | |
| 995 | 782 | 787 | 791 | 795 | 800 | 804 | 808 | 813 | 817 | 822 | | | |
| 996 | 826 | 830 | 835 | 839 | 843 | 848 | 852 | 856 | 861 | 865 | | | |
| 997 | 870 | 874 | 878 | 883 | 887 | 891 | 896 | 900 | 904 | 909 | | | |
| 998 | 913 | 917 | 922 | 926 | 930 | 935 | 939 | 944 | 948 | 952 | | | |
| 999 | 957 | 961 | 965 | 970 | 974 | 978 | 983 | 987 | 991 | 996 | | | |
| 1000 | 00 000 | 004 | 009 | 013 | 017 | 022 | 026 | 030 | 035 | 039 | | | |
| N | L 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | |
| 9480° | =2° 38' S | 4.68 | 542 | T | 4.68 | 588 | 9780° | =2° 43' S | 4.68 | 541 | T | 4.68 | 590 |
| 9540 | =2 39 | 4.68 | 542 | | 4.68 | 588 | 9840 | =2 44 | 4.68 | 541 | | 4.68 | 590 |
| 9600 | =2 40 | 4.68 | 542 | | 4.68 | 589 | 9900 | =2 45 | 4.68 | 541 | | 4.68 | 591 |
| 9660 | =2 41 | 4.68 | 542 | | 4.68 | 589 | 9960 | =2 46 | 4.68 | 541 | | 4.68 | 591 |
| 9720 | =2 42 | 4.68 | 541 | | 4.68 | 590 | 10020 | =2 47 | 4.68 | 540 | | 4.68 | 592 |

THE NATURAL LOGARITHMS

OF

WHOLE NUMBERS FROM 1 TO 200.

Common logarithms may be converted into natural logarithms by multiplying them by 2.3025850930.

Natural logarithms may be converted into common logarithms by multiplying them by 0.4342944819.

| N | Nat Log | N | Nat Log | N | Nat Log | N | Nat Log | N | Nat Log |
|----|-----------|----|----------|-----|----------|-----|----------|-----|----------|
| 0 | $-\infty$ | 40 | 3.68 888 | 80 | 4.38 203 | 120 | 4.78 749 | 160 | 5.07 517 |
| 1 | 0.00 000 | 41 | 3.71 357 | 81 | 4.39 445 | 121 | 4.79 579 | 161 | 5.08 140 |
| 2 | 0.69 315 | 42 | 3.73 767 | 82 | 4.40 672 | 122 | 4.80 402 | 162 | 5.08 760 |
| 3 | 1.09 861 | 43 | 3.76 120 | 83 | 4.41 884 | 123 | 4.81 218 | 163 | 5.09 375 |
| 4 | 1.38 629 | 44 | 3.78 419 | 84 | 4.43 082 | 124 | 4.82 028 | 164 | 5.09 987 |
| 5 | 1.60 944 | 45 | 3.80 666 | 85 | 4.44 265 | 125 | 4.82 831 | 165 | 5.10 595 |
| 6 | 1.79 176 | 46 | 3.82 864 | 86 | 4.45 435 | 126 | 4.83 628 | 166 | 5.11 199 |
| 7 | 1.94 591 | 47 | 3.85 015 | 87 | 4.46 591 | 127 | 4.84 419 | 167 | 5.11 799 |
| 8 | 2.07 944 | 48 | 3.87 120 | 88 | 4.47 734 | 128 | 4.85 203 | 168 | 5.12 396 |
| 9 | 2.19 722 | 49 | 3.89 182 | 89 | 4.48 864 | 129 | 4.85 981 | 169 | 5.12 990 |
| 10 | 2.30 259 | 50 | 3.91 202 | 90 | 4.49 981 | 130 | 4.86 753 | 170 | 5.13 580 |
| 11 | 2.39 790 | 51 | 3.93 183 | 91 | 4.51 086 | 131 | 4.87 520 | 171 | 5.14 166 |
| 12 | 2.48 491 | 52 | 3.95 124 | 92 | 4.52 179 | 132 | 4.88 280 | 172 | 5.14 749 |
| 13 | 2.56 495 | 53 | 3.97 029 | 93 | 4.53 260 | 133 | 4.89 035 | 173 | 5.15 329 |
| 14 | 2.63 906 | 54 | 3.98 898 | 94 | 4.54 329 | 134 | 4.89 784 | 174 | 5.15 906 |
| 15 | 2.70 805 | 55 | 4.00 733 | 95 | 4.55 388 | 135 | 4.90 527 | 175 | 5.16 479 |
| 16 | 2.77 259 | 56 | 4.02 535 | 96 | 4.56 435 | 136 | 4.91 265 | 176 | 5.17 048 |
| 17 | 2.83 321 | 57 | 4.04 305 | 97 | 4.57 471 | 137 | 4.91 998 | 177 | 5.17 615 |
| 18 | 2.89 037 | 58 | 4.06 044 | 98 | 4.58 497 | 138 | 4.92 725 | 178 | 5.18 178 |
| 19 | 2.94 444 | 59 | 4.07 754 | 99 | 4.59 512 | 139 | 4.93 447 | 179 | 5.18 739 |
| 20 | 2.99 573 | 60 | 4.09 434 | 100 | 4.60 517 | 140 | 4.94 164 | 180 | 5.19 296 |
| 21 | 3.04 452 | 61 | 4.11 087 | 101 | 4.61 512 | 141 | 4.94 876 | 181 | 5.19 850 |
| 22 | 3.09 104 | 62 | 4.12 713 | 102 | 4.62 497 | 142 | 4.95 583 | 182 | 5.20 401 |
| 23 | 3.13 549 | 63 | 4.14 313 | 103 | 4.63 473 | 143 | 4.96 284 | 183 | 5.20 949 |
| 24 | 3.17 805 | 64 | 4.15 888 | 104 | 4.64 439 | 144 | 4.96 981 | 184 | 5.21 494 |
| 25 | 3.21 888 | 65 | 4.17 439 | 105 | 4.65 396 | 145 | 4.97 673 | 185 | 5.22 036 |
| 26 | 3.25 810 | 66 | 4.18 965 | 106 | 4.66 344 | 146 | 4.98 361 | 186 | 5.22 575 |
| 27 | 3.29 584 | 67 | 4.20 469 | 107 | 4.67 283 | 147 | 4.99 043 | 187 | 5.23 111 |
| 28 | 3.33 220 | 68 | 4.21 951 | 108 | 4.68 213 | 148 | 4.99 721 | 188 | 5.23 644 |
| 29 | 3.36 730 | 69 | 4.23 411 | 109 | 4.69 135 | 149 | 5.00 395 | 189 | 5.24 175 |
| 30 | 3.40 120 | 70 | 4.24 850 | 110 | 4.70 048 | 150 | 5.01 064 | 190 | 5.24 702 |
| 31 | 3.43 399 | 71 | 4.26 268 | 111 | 4.70 953 | 151 | 5.01 728 | 191 | 5.25 227 |
| 32 | 3.46 574 | 72 | 4.27 667 | 112 | 4.71 850 | 152 | 5.02 388 | 192 | 5.25 750 |
| 33 | 3.49 651 | 73 | 4.29 046 | 113 | 4.72 739 | 153 | 5.03 044 | 193 | 5.26 269 |
| 34 | 3.52 636 | 74 | 4.30 407 | 114 | 4.73 620 | 154 | 5.03 695 | 194 | 5.26 786 |
| 35 | 3.55 535 | 75 | 4.31 749 | 115 | 4.74 493 | 155 | 5.04 343 | 195 | 5.27 300 |
| 36 | 3.58 352 | 76 | 4.33 073 | 116 | 4.75 359 | 156 | 5.04 986 | 196 | 5.27 811 |
| 37 | 3.61 092 | 77 | 4.34 381 | 117 | 4.76 217 | 157 | 5.05 625 | 197 | 5.28 320 |
| 38 | 3.63 759 | 78 | 4.35 671 | 118 | 4.77 068 | 158 | 5.06 260 | 198 | 5.28 827 |
| 39 | 3.66 356 | 79 | 4.36 945 | 119 | 4.77 912 | 159 | 5.06 890 | 199 | 5.29 330 |
| 40 | 3.68 888 | 80 | 4.38 203 | 120 | 4.78 749 | 160 | 5.07 517 | 200 | 5.29 832 |

II

TABLE OF ADDITION AND SUBTRACTION
LOGARITHMS

FOR THE

CALCULATION OF THE LOGARITHMS

OF THE

SUM AND DIFFERENCE OF TWO NUMBERS WHOSE
LOGARITHMS ARE GIVEN.

ADDITION.

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
|------|----------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|
| 0.00 | 0.30 103 | 053 | 003 | *953 | *903 | *854 | *804 | *754 | *705 | *655 | | | | | |
| 01 | 0.29 606 | 556 | 507 | 458 | 409 | 359 | 310 | 261 | 212 | 163 | | | | | |
| 02 | 115 | 066 | 017 | *968 | *920 | *871 | *822 | *774 | *726 | *677 | 1 | 5.0 | 4.9 | 4.8 | 4.7 |
| 03 | 0.28 629 | 581 | 532 | 484 | 436 | 388 | 340 | 292 | 245 | 197 | 2 | 10.0 | 9.8 | 9.6 | 9.4 |
| 04 | 149 | 101 | 054 | 006 | *959 | *911 | *864 | *817 | *769 | *722 | 3 | 15.0 | 14.7 | 14.4 | 14.1 |
| 05 | 0.27 675 | 628 | 581 | 534 | 487 | 440 | 393 | 346 | 300 | 253 | 4 | 20.0 | 19.6 | 19.2 | 18.8 |
| 06 | 207 | 160 | 114 | 067 | 021 | *974 | *928 | *882 | *836 | *790 | 5 | 25.0 | 24.5 | 24.0 | 23.5 |
| 07 | 0.26 744 | 698 | 652 | 606 | 560 | 515 | 469 | 423 | 378 | 332 | 6 | 30.0 | 29.4 | 28.8 | 28.2 |
| 08 | 287 | 242 | 196 | 151 | 106 | 061 | 016 | *970 | *926 | *881 | 7 | 35.0 | 34.3 | 33.6 | 32.9 |
| 09 | 0.25 836 | 791 | 746 | 701 | 657 | 612 | 568 | 523 | 479 | 434 | 8 | 40.0 | 39.2 | 38.4 | 37.6 |
| 0.10 | 390 | 346 | 302 | 258 | 214 | 170 | 126 | 082 | 038 | *994 | 9 | 45.0 | 44.1 | 43.2 | 42.3 |
| 11 | 0.24 950 | 907 | 863 | 819 | 776 | 733 | 689 | 646 | 603 | 559 | | 46 | 45 | 44 | 43 |
| 12 | 516 | 473 | 430 | 387 | 344 | 301 | 258 | 216 | 173 | 130 | 1 | 4.6 | 4.5 | 4.4 | 4.3 |
| 13 | 088 | 045 | 003 | *960 | *918 | *875 | *833 | *791 | *749 | *707 | 2 | 9.2 | 9.0 | 8.8 | 8.6 |
| 14 | 0.23 665 | 623 | 581 | 539 | 497 | 455 | 414 | 372 | 330 | 289 | 3 | 13.8 | 13.5 | 13.2 | 12.9 |
| 15 | 247 | 206 | 165 | 123 | 082 | 041 | 000 | *959 | *918 | *877 | 4 | 18.4 | 18.0 | 17.6 | 17.2 |
| 16 | 0.22 836 | 795 | 754 | 713 | 673 | 632 | 591 | 551 | 510 | 470 | 5 | 23.0 | 22.5 | 22.0 | 21.5 |
| 17 | 430 | 389 | 349 | 309 | 269 | 229 | 189 | 149 | 109 | 069 | 6 | 27.6 | 27.0 | 26.4 | 25.8 |
| 18 | 029 | *989 | *949 | *910 | *870 | *831 | *791 | *752 | *712 | *673 | 7 | 32.2 | 31.5 | 30.8 | 30.1 |
| 19 | 0.21 634 | 595 | 556 | 516 | 477 | 438 | 399 | 361 | 322 | 283 | 8 | 36.8 | 36.0 | 35.2 | 34.4 |
| 0.20 | 244 | 206 | 167 | 128 | 090 | 052 | 013 | *975 | *937 | *898 | 9 | 41.4 | 40.5 | 39.6 | 38.7 |
| 21 | 0.20 860 | 822 | 784 | 746 | 708 | 670 | 632 | 594 | 557 | 519 | | 42 | 41 | 40 | 39 |
| 22 | 481 | 444 | 406 | 369 | 331 | 294 | 257 | 220 | 182 | 145 | 1 | 4.2 | 4.1 | 4.0 | 3.9 |
| 23 | 108 | 071 | 034 | *997 | *960 | *923 | *887 | *850 | *813 | *777 | 2 | 8.4 | 8.2 | 8.0 | 7.8 |
| 24 | 0.19 740 | 704 | 667 | 631 | 595 | 558 | 522 | 486 | 450 | 414 | 3 | 12.6 | 12.3 | 12.0 | 11.7 |
| 25 | 378 | 342 | 306 | 270 | 234 | 198 | 163 | 127 | 091 | 056 | 4 | 16.3 | 16.4 | 16.0 | 15.6 |
| 26 | 020 | *985 | *949 | *914 | *879 | *844 | *808 | *773 | *738 | *703 | 5 | 21.0 | 20.5 | 20.0 | 19.5 |
| 27 | 0.18 668 | 633 | 599 | 564 | 529 | 494 | 460 | 425 | 390 | 356 | 6 | 25.2 | 24.6 | 24.0 | 23.4 |
| 28 | 322 | 287 | 253 | 218 | 184 | 150 | 116 | 082 | 048 | 014 | 7 | 29.4 | 28.7 | 28.0 | 27.3 |
| 29 | 0.17 980 | 946 | 912 | 878 | 845 | 811 | 777 | 744 | 710 | 677 | 8 | 33.6 | 32.8 | 32.0 | 31.2 |
| 0.30 | 643 | 610 | 577 | 544 | 510 | 477 | 444 | 411 | 378 | 345 | 9 | 37.8 | 36.9 | 36.0 | 35.1 |
| 31 | 312 | 279 | 247 | 214 | 181 | 148 | 116 | 083 | 051 | 018 | | 38 | 37 | 36 | 35 |
| 32 | 0.16 986 | 954 | 921 | 889 | 857 | 825 | 793 | 761 | 729 | 697 | 1 | 3.8 | 3.7 | 3.6 | 3.5 |
| 33 | 665 | 633 | 601 | 569 | 538 | 506 | 474 | 443 | 411 | 380 | 2 | 7.6 | 7.4 | 7.2 | 7.0 |
| 34 | 349 | 317 | 286 | 255 | 224 | 192 | 161 | 130 | 099 | 068 | 3 | 11.4 | 11.1 | 10.8 | 10.5 |
| 35 | 037 | 007 | *976 | *945 | *914 | *884 | *853 | *822 | *792 | *761 | 4 | 15.2 | 14.8 | 14.4 | 14.0 |
| 36 | 0.15 731 | 701 | 670 | 640 | 610 | 580 | 550 | 520 | 489 | 460 | 5 | 19.0 | 18.5 | 18.0 | 17.5 |
| 37 | 430 | 400 | 370 | 340 | 310 | 281 | 251 | 221 | 192 | 162 | 6 | 22.8 | 22.2 | 21.6 | 21.0 |
| 38 | 133 | 104 | 074 | 045 | 016 | *986 | *957 | *928 | *899 | *870 | 7 | 26.6 | 25.9 | 25.2 | 24.5 |
| 39 | 0.14 841 | 812 | 783 | 755 | 726 | 697 | 668 | 640 | 611 | 583 | 8 | 30.4 | 29.6 | 28.8 | 28.0 |
| 0.40 | 554 | 526 | 497 | 469 | 441 | 412 | 384 | 356 | 328 | 300 | 9 | 34.2 | 33.3 | 32.4 | 31.5 |
| 41 | 272 | 244 | 216 | 188 | 160 | 132 | 104 | 077 | 049 | 021 | | 34 | 33 | 32 | 31 |
| 42 | 0.13 994 | 966 | 939 | 911 | 884 | 857 | 829 | 802 | 775 | 748 | 1 | 3.4 | 3.3 | 3.2 | 3.1 |
| 43 | 721 | 694 | 667 | 640 | 613 | 586 | 559 | 532 | 505 | 479 | 2 | 6.8 | 6.6 | 6.4 | 6.2 |
| 44 | 452 | 425 | 399 | 372 | 346 | 319 | 293 | 267 | 240 | 214 | 3 | 10.2 | 9.9 | 9.6 | 9.3 |
| 45 | 188 | 162 | 136 | 110 | 084 | 058 | 032 | 006 | *980 | *954 | 4 | 13.6 | 13.2 | 12.8 | 12.4 |
| 46 | 0.12 928 | 903 | 877 | 851 | 826 | 800 | 775 | 749 | 724 | 698 | 5 | 17.0 | 16.5 | 16.0 | 15.5 |
| 47 | 673 | 648 | 622 | 597 | 572 | 547 | 522 | 497 | 472 | 447 | 6 | 20.4 | 19.8 | 19.2 | 18.6 |
| 48 | 422 | 397 | 372 | 348 | 323 | 298 | 274 | 249 | 224 | 200 | 7 | 23.8 | 23.1 | 22.4 | 21.7 |
| 49 | 175 | 151 | 127 | 102 | 078 | 054 | 030 | 005 | *981 | *957 | 8 | 27.2 | 26.4 | 25.6 | 24.8 |
| 0.50 | 0.11 933 | 909 | 885 | 861 | 837 | 814 | 790 | 766 | 742 | 719 | 9 | 30.6 | 29.7 | 28.8 | 27.9 |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |

$$a > b, \quad A = \log a - \log b, \quad \log(a + b) = \log a + B.$$

ADDITION.

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | | |
|--|----------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|--|
| 0.50 | 0.11 933 | 909 | 885 | 861 | 837 | 814 | 790 | 766 | 742 | 719 | | | | | | |
| 51 | 695 | 671 | 648 | 624 | 601 | 577 | 554 | 531 | 507 | 484 | 1 | 30 | 29 | 28 | 27 | |
| 52 | 461 | 438 | 415 | 392 | 368 | 345 | 323 | 300 | 277 | 254 | 2 | 3.0 | 2.9 | 2.8 | 2.7 | |
| 53 | 231 | 208 | 186 | 163 | 140 | 118 | 095 | 073 | 050 | 028 | 3 | 6.0 | 5.8 | 5.6 | 5.4 | |
| 54 | 005 | *983 | *960 | *938 | *916 | *894 | *872 | *849 | *827 | *805 | 4 | 9.0 | 8.7 | 8.4 | 8.1 | |
| 55 | 0.10 783 | 761 | 739 | 718 | 696 | 674 | 652 | 630 | 609 | 587 | 5 | 12.0 | 11.6 | 11.2 | 10.8 | |
| 56 | 565 | 544 | 522 | 501 | 479 | 458 | 437 | 415 | 394 | 373 | 6 | 15.0 | 14.5 | 14.0 | 13.5 | |
| 57 | 351 | 330 | 309 | 288 | 267 | 246 | 225 | 204 | 183 | 162 | 7 | 18.0 | 17.4 | 16.8 | 16.2 | |
| 58 | 141 | 120 | 100 | 079 | 058 | 038 | 017 | *996 | *976 | *955 | 8 | 21.0 | 20.3 | 19.6 | 18.9 | |
| 59 | 0.09 935 | 914 | 894 | 874 | 853 | 833 | 813 | 793 | 773 | 752 | 9 | 24.0 | 23.2 | 22.4 | 21.6 | |
| | | | | | | | | | | | | 27.0 | 26.1 | 25.2 | 24.3 | |
| 0.60 | 732 | 712 | 692 | 672 | 652 | 632 | 612 | 593 | 573 | 553 | | | | | | |
| 61 | 533 | 514 | 494 | 474 | 455 | 435 | 416 | 396 | 377 | 357 | 1 | 26 | 25 | 24 | 23 | |
| 62 | 338 | 319 | 299 | 280 | 261 | 242 | 223 | 204 | 184 | 165 | 2 | 2.6 | 2.5 | 2.4 | 2.3 | |
| 63 | 146 | 127 | 108 | 090 | 071 | 052 | 033 | 014 | *990 | *977 | 3 | 5.2 | 5.0 | 4.8 | 4.6 | |
| 64 | 0.08 958 | 940 | 921 | 902 | 884 | 865 | 847 | 829 | 810 | 792 | 4 | 7.8 | 7.5 | 7.2 | 6.9 | |
| 65 | 774 | 755 | 737 | 719 | 701 | 683 | 664 | 646 | 628 | 610 | 5 | 10.4 | 10.0 | 9.6 | 9.2 | |
| 66 | 592 | 574 | 557 | 539 | 521 | 503 | 485 | 468 | 450 | 432 | 6 | 13.0 | 12.5 | 12.0 | 11.5 | |
| 67 | 415 | 397 | 379 | 362 | 344 | 327 | 309 | 292 | 275 | 257 | 7 | 15.6 | 15.0 | 14.4 | 13.8 | |
| 68 | 240 | 223 | 206 | 188 | 171 | 154 | 137 | 120 | 103 | 086 | 8 | 18.2 | 17.5 | 16.8 | 16.1 | |
| 69 | 069 | 052 | 035 | 018 | 001 | *985 | *968 | *951 | *934 | *918 | 9 | 20.8 | 20.0 | 19.2 | 18.4 | |
| | | | | | | | | | | | | 23.4 | 22.5 | 21.6 | 20.7 | |
| 0.70 | 0.07 901 | 884 | 868 | 851 | 835 | 818 | 802 | 785 | 769 | 753 | | | | | | |
| 71 | 736 | 720 | 704 | 687 | 671 | 655 | 639 | 623 | 607 | 591 | 1 | 22 | 21 | 19 | 18 | |
| 72 | 575 | 559 | 543 | 527 | 511 | 495 | 479 | 463 | 448 | 432 | 2 | 2.2 | 2.1 | 1.9 | 1.8 | |
| 73 | 416 | 400 | 385 | 369 | 354 | 338 | 322 | 307 | 291 | 276 | 3 | 4.4 | 4.2 | 3.8 | 3.6 | |
| 74 | 261 | 245 | 230 | 215 | 199 | 184 | 169 | 154 | 138 | 123 | 4 | 6.6 | 6.3 | 5.7 | 5.4 | |
| 75 | 108 | 093 | 078 | 063 | 048 | 033 | 018 | 003 | *988 | *973 | 5 | 8.8 | 8.4 | 7.6 | 7.2 | |
| 76 | 0.06 959 | 944 | 929 | 914 | 900 | 885 | 870 | 856 | 841 | 827 | 6 | 11.0 | 10.5 | 9.5 | 9.0 | |
| 77 | 712 | 698 | 783 | 769 | 754 | 740 | 725 | 711 | 697 | 683 | 7 | 13.2 | 12.6 | 11.4 | 10.8 | |
| 78 | 668 | 654 | 640 | 626 | 612 | 597 | 583 | 569 | 555 | 541 | 8 | 15.4 | 14.7 | 13.3 | 12.6 | |
| 79 | 527 | 513 | 500 | 486 | 472 | 458 | 444 | 430 | 417 | 403 | 9 | 17.6 | 16.8 | 15.2 | 14.4 | |
| | | | | | | | | | | | | 19.8 | 18.9 | 17.1 | 16.2 | |
| 0.80 | 389 | 376 | 362 | 348 | 335 | 321 | 308 | 294 | 281 | 267 | | | | | | |
| 81 | 254 | 240 | 227 | 214 | 200 | 187 | 174 | 161 | 147 | 134 | 1 | 17 | 16 | 15 | 14 | |
| 82 | 121 | 108 | 095 | 082 | 069 | 056 | 043 | 030 | 017 | 004 | 2 | 1.7 | 1.6 | 1.5 | 1.4 | |
| 83 | 0.05 991 | 978 | 965 | 952 | 939 | 927 | 914 | 901 | 889 | 876 | 3 | 3.4 | 3.2 | 3.0 | 2.8 | |
| 84 | 863 | 851 | 838 | 825 | 813 | 800 | 788 | 775 | 763 | 751 | 4 | 5.1 | 4.8 | 4.5 | 4.2 | |
| 85 | 738 | 726 | 714 | 701 | 689 | 677 | 664 | 652 | 640 | 628 | 5 | 6.8 | 6.4 | 6.0 | 5.6 | |
| 86 | 616 | 604 | 591 | 579 | 567 | 555 | 543 | 531 | 519 | 508 | 6 | 8.5 | 8.0 | 7.5 | 7.0 | |
| 87 | 496 | 484 | 472 | 460 | 448 | 436 | 425 | 413 | 401 | 390 | 7 | 10.2 | 9.6 | 9.0 | 8.4 | |
| 88 | 378 | 366 | 355 | 343 | 332 | 320 | 308 | 297 | 286 | 274 | 8 | 11.9 | 11.2 | 10.5 | 9.8 | |
| 89 | 263 | 251 | 240 | 229 | 217 | 206 | 195 | 183 | 172 | 161 | 9 | 13.6 | 12.8 | 12.0 | 11.2 | |
| | | | | | | | | | | | | 15.3 | 14.4 | 13.5 | 12.6 | |
| 0.90 | 150 | 139 | 127 | 116 | 105 | 094 | 083 | 072 | 061 | 050 | | | | | | |
| 91 | 039 | 028 | 017 | 006 | *995 | *985 | *974 | *963 | *952 | *941 | 1 | 13 | 12 | 11 | 9 | |
| 92 | 0.04 931 | 920 | 909 | 898 | 888 | 877 | 867 | 856 | 845 | 835 | 2 | 1.3 | 1.2 | 1.1 | 0.9 | |
| 93 | 824 | 814 | 803 | 793 | 782 | 772 | 762 | 751 | 741 | 731 | 3 | 2.6 | 2.4 | 2.2 | 1.8 | |
| 94 | 720 | 710 | 700 | 689 | 679 | 669 | 659 | 649 | 639 | 628 | 4 | 3.9 | 3.6 | 3.3 | 2.7 | |
| 95 | 618 | 608 | 598 | 588 | 578 | 568 | 558 | 548 | 538 | 528 | 5 | 5.2 | 4.8 | 4.4 | 3.6 | |
| 96 | 519 | 509 | 499 | 489 | 479 | 469 | 460 | 450 | 440 | 430 | 6 | 6.5 | 6.0 | 5.5 | 4.5 | |
| 97 | 421 | 411 | 401 | 392 | 382 | 373 | 363 | 353 | 344 | 334 | 7 | 7.8 | 7.2 | 6.6 | 5.4 | |
| 98 | 325 | 315 | 306 | 297 | 287 | 278 | 268 | 259 | 250 | 240 | 8 | 9.1 | 8.4 | 7.7 | 6.3 | |
| 99 | 231 | 222 | 213 | 203 | 194 | 185 | 176 | 167 | 157 | 148 | 9 | 10.4 | 9.6 | 8.8 | 7.2 | |
| | | | | | | | | | | | | 11.7 | 10.8 | 9.9 | 8.1 | |
| 1.00 | 139 | 130 | 121 | 112 | 103 | 094 | 085 | 076 | 067 | 058 | | | | | | |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | | |
| $a > b, \quad A = \log a - \log b, \quad \log (a + b) = \log a + B.$ | | | | | | | | | | | | | | | | |

ADDITION.

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|------|----------|-----|-----|-----|-----|-----|------|------|------|------|-----|-----|
| 1.00 | 0.04 139 | 130 | 121 | 112 | 103 | 094 | 085 | 076 | 067 | 058 | 9 | |
| 01 | 040 | 040 | 032 | 023 | 014 | 005 | *996 | *987 | *979 | *970 | 1 | 0.9 |
| 02 | 0.03 961 | 953 | 944 | 935 | 926 | 918 | 909 | 901 | 892 | 883 | 2 | 1.8 |
| 03 | 875 | 866 | 858 | 849 | 841 | 832 | 824 | 816 | 807 | 799 | 3 | 2.7 |
| 04 | 790 | 782 | 774 | 765 | 757 | 749 | 741 | 732 | 724 | 716 | 4 | 3.6 |
| 05 | 708 | 700 | 691 | 683 | 675 | 667 | 659 | 651 | 643 | 635 | 5 | 4.5 |
| 06 | 627 | 619 | 611 | 603 | 595 | 587 | 579 | 571 | 563 | 555 | 6 | 5.4 |
| 07 | 548 | 540 | 532 | 524 | 516 | 509 | 501 | 493 | 485 | 478 | 7 | 6.3 |
| 08 | 470 | 462 | 455 | 447 | 439 | 432 | 424 | 417 | 409 | 401 | 8 | 7.2 |
| 09 | 394 | 386 | 379 | 371 | 364 | 357 | 349 | 342 | 334 | 327 | 9 | 8.1 |
| 1.10 | 320 | 312 | 305 | 298 | 290 | 283 | 276 | 268 | 261 | 254 | 8 7 | |
| 11 | 247 | 240 | 232 | 225 | 218 | 211 | 204 | 197 | 190 | 183 | 1 | 0.8 |
| 12 | 175 | 168 | 161 | 154 | 147 | 140 | 133 | 126 | 120 | 113 | 2 | 1.6 |
| 13 | 106 | 099 | 092 | 085 | 078 | 071 | 065 | 058 | 051 | 044 | 3 | 2.4 |
| 14 | 037 | 031 | 024 | 017 | 011 | 004 | *997 | *991 | *984 | *977 | 4 | 3.2 |
| 15 | 0.02 971 | 964 | 957 | 951 | 944 | 938 | 931 | 925 | 918 | 912 | 5 | 4.0 |
| 16 | 905 | 899 | 892 | 886 | 879 | 873 | 867 | 860 | 854 | 848 | 6 | 4.8 |
| 17 | 841 | 835 | 829 | 822 | 816 | 810 | 803 | 797 | 791 | 785 | 7 | 5.6 |
| 18 | 779 | 772 | 766 | 760 | 754 | 748 | 742 | 735 | 729 | 723 | 8 | 6.4 |
| 19 | 717 | 711 | 705 | 699 | 693 | 687 | 681 | 675 | 669 | 663 | 9 | 7.2 |
| 1.20 | 657 | 651 | 645 | 639 | 634 | 628 | 622 | 616 | 610 | 604 | 6 | |
| 21 | 599 | 593 | 587 | 581 | 575 | 570 | 564 | 558 | 552 | 547 | 1 | 0.6 |
| 22 | 541 | 535 | 530 | 524 | 518 | 513 | 507 | 502 | 496 | 490 | 2 | 1.2 |
| 23 | 485 | 479 | 474 | 468 | 463 | 457 | 452 | 446 | 441 | 435 | 3 | 1.8 |
| 24 | 430 | 424 | 419 | 414 | 408 | 403 | 397 | 392 | 387 | 381 | 4 | 2.4 |
| 25 | 376 | 371 | 365 | 360 | 355 | 350 | 344 | 339 | 334 | 329 | 5 | 3.0 |
| 26 | 323 | 318 | 313 | 308 | 303 | 297 | 292 | 287 | 282 | 277 | 6 | 3.6 |
| 27 | 272 | 267 | 262 | 257 | 252 | 246 | 241 | 236 | 231 | 226 | 7 | 4.2 |
| 28 | 221 | 216 | 211 | 207 | 202 | 197 | 192 | 187 | 182 | 177 | 8 | 4.8 |
| 29 | 172 | 167 | 162 | 158 | 153 | 148 | 143 | 138 | 133 | 129 | 9 | 5.4 |
| 1.30 | 124 | 119 | 114 | 110 | 105 | 100 | 095 | 091 | 086 | 081 | 5 4 | |
| 31 | 077 | 072 | 067 | 063 | 058 | 053 | 049 | 044 | 040 | 035 | 1 | 0.5 |
| 32 | 030 | 026 | 021 | 017 | 012 | 008 | 003 | *999 | *994 | *990 | 2 | 1.0 |
| 33 | 0.01 985 | 981 | 976 | 972 | 967 | 963 | 959 | 954 | 950 | 945 | 3 | 1.5 |
| 34 | 941 | 937 | 932 | 928 | 924 | 919 | 915 | 911 | 906 | 902 | 4 | 2.0 |
| 35 | 898 | 894 | 889 | 885 | 881 | 877 | 872 | 868 | 864 | 860 | 5 | 2.5 |
| 36 | 856 | 851 | 847 | 843 | 839 | 835 | 831 | 827 | 822 | 818 | 6 | 3.0 |
| 37 | 814 | 810 | 806 | 802 | 798 | 794 | 790 | 786 | 782 | 778 | 7 | 3.5 |
| 38 | 774 | 770 | 766 | 762 | 758 | 754 | 750 | 746 | 742 | 738 | 8 | 4.0 |
| 39 | 734 | 730 | 726 | 722 | 719 | 715 | 711 | 707 | 703 | 699 | 9 | 4.5 |
| 1.40 | 695 | 692 | 688 | 684 | 680 | 676 | 673 | 669 | 665 | 661 | 3 | |
| 41 | 658 | 654 | 650 | 646 | 643 | 639 | 635 | 632 | 628 | 624 | 1 | 0.3 |
| 42 | 621 | 617 | 613 | 610 | 606 | 602 | 599 | 595 | 591 | 588 | 2 | 0.6 |
| 43 | 584 | 581 | 577 | 574 | 570 | 566 | 563 | 559 | 556 | 552 | 3 | 0.9 |
| 44 | 549 | 545 | 542 | 538 | 535 | 531 | 528 | 525 | 521 | 518 | 4 | 1.2 |
| 45 | 514 | 511 | 507 | 504 | 501 | 497 | 494 | 490 | 487 | 484 | 5 | 1.5 |
| 46 | 480 | 477 | 474 | 470 | 467 | 464 | 460 | 457 | 454 | 450 | 6 | 1.8 |
| 47 | 447 | 444 | 441 | 437 | 434 | 431 | 428 | 424 | 421 | 418 | 7 | 2.1 |
| 48 | 415 | 412 | 408 | 405 | 402 | 399 | 396 | 393 | 389 | 386 | 8 | 2.4 |
| 49 | 383 | 380 | 377 | 374 | 371 | 368 | 364 | 361 | 358 | 355 | 9 | 2.7 |
| 1.50 | 0.01 352 | 349 | 346 | 343 | 340 | 337 | 334 | 331 | 328 | 325 | | |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |

$$a > b, \quad A = \log a - \log b, \quad \log(a + b) = \log a + B.$$

ADDITION.

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |
|------|----------|-----|-----|------|------|------|------|------|------|------|-----|
| 1.50 | 0.01 352 | 349 | 346 | 343 | 340 | 337 | 334 | 331 | 328 | 325 | |
| 51 | 322 | 319 | 316 | 313 | 310 | 307 | 304 | 301 | 298 | 295 | |
| 52 | 292 | 289 | 286 | 283 | 280 | 278 | 275 | 272 | 269 | 266 | |
| 53 | 263 | 260 | 257 | 255 | 252 | 249 | 246 | 243 | 240 | 238 | |
| 54 | 235 | 232 | 229 | 226 | 224 | 221 | 218 | 215 | 213 | 210 | |
| 55 | 207 | 204 | 202 | 199 | 196 | 193 | 191 | 188 | 185 | 183 | |
| 56 | 180 | 177 | 175 | 172 | 169 | 167 | 164 | 161 | 159 | 156 | |
| 57 | 153 | 151 | 148 | 146 | 143 | 140 | 138 | 135 | 133 | 130 | |
| 58 | 128 | 125 | 122 | 120 | 117 | 115 | 112 | 110 | 107 | 105 | |
| 59 | 102 | 100 | 097 | 095 | 092 | 090 | 087 | 085 | 082 | 080 | |
| 1.60 | 0.01 077 | 075 | 073 | 070 | 068 | 065 | 063 | 060 | 058 | 056 | |
| 61 | 053 | 051 | 048 | 046 | 044 | 041 | 039 | 037 | 034 | 032 | |
| 62 | 030 | 027 | 025 | 022 | 020 | 018 | 016 | 013 | 011 | 009 | |
| 63 | 006 | 004 | 002 | *999 | *997 | *995 | *993 | *990 | *988 | *986 | |
| 64 | 0.00 984 | 981 | 979 | 977 | 975 | 973 | 970 | 968 | 966 | 964 | |
| 65 | 962 | 959 | 957 | 955 | 953 | 951 | 948 | 946 | 944 | 942 | |
| 66 | 940 | 938 | 936 | 933 | 931 | 929 | 927 | 925 | 923 | 921 | |
| 67 | 919 | 917 | 915 | 912 | 910 | 908 | 906 | 904 | 902 | 900 | |
| 68 | 898 | 896 | 894 | 892 | 890 | 888 | 886 | 884 | 882 | 880 | |
| 69 | 878 | 876 | 874 | 872 | 870 | 868 | 866 | 864 | 862 | 860 | |
| 1.70 | 0.00 858 | 856 | 854 | 852 | 850 | 848 | 846 | 844 | 842 | 841 | |
| 71 | 839 | 837 | 835 | 833 | 831 | 829 | 827 | 825 | 823 | 822 | |
| 72 | 820 | 818 | 816 | 814 | 812 | 810 | 809 | 807 | 805 | 803 | |
| 73 | 801 | 799 | 798 | 796 | 794 | 792 | 790 | 789 | 787 | 785 | |
| 74 | 783 | 781 | 780 | 778 | 776 | 774 | 773 | 771 | 769 | 767 | |
| 75 | 766 | 764 | 762 | 760 | 759 | 757 | 755 | 753 | 752 | 750 | |
| 76 | 748 | 747 | 745 | 743 | 741 | 740 | 738 | 736 | 735 | 733 | |
| 77 | 731 | 730 | 728 | 726 | 725 | 723 | 721 | 720 | 718 | 716 | |
| 78 | 715 | 713 | 712 | 710 | 708 | 707 | 705 | 703 | 702 | 700 | |
| 79 | 699 | 697 | 696 | 694 | 692 | 691 | 689 | 688 | 686 | 684 | |
| 1.80 | 0.00 683 | 681 | 680 | 678 | 677 | 675 | 674 | 672 | 671 | 669 | |
| 81 | 667 | 666 | 664 | 663 | 661 | 660 | 658 | 657 | 655 | 654 | |
| 82 | 652 | 651 | 649 | 648 | 646 | 645 | 644 | 642 | 641 | 639 | |
| 83 | 638 | 636 | 635 | 633 | 632 | 630 | 629 | 628 | 626 | 625 | |
| 84 | 623 | 622 | 620 | 619 | 618 | 616 | 615 | 613 | 612 | 611 | |
| 85 | 609 | 608 | 606 | 605 | 604 | 602 | 601 | 599 | 598 | 597 | |
| 86 | 595 | 594 | 593 | 591 | 590 | 589 | 587 | 586 | 585 | 583 | |
| 87 | 582 | 581 | 579 | 578 | 577 | 575 | 574 | 573 | 571 | 570 | |
| 88 | 569 | 567 | 566 | 565 | 564 | 562 | 561 | 560 | 558 | 557 | |
| 89 | 556 | 555 | 553 | 552 | 551 | 550 | 548 | 547 | 546 | 545 | |
| 1.90 | 0.00 543 | 542 | 541 | 540 | 538 | 537 | 536 | 535 | 533 | 532 | |
| 91 | 531 | 530 | 529 | 527 | 526 | 525 | 524 | 523 | 521 | 520 | |
| 92 | 519 | 518 | 517 | 515 | 514 | 513 | 512 | 511 | 510 | 508 | |
| 93 | 507 | 506 | 505 | 504 | 503 | 502 | 500 | 499 | 498 | 497 | |
| 94 | 496 | 495 | 494 | 492 | 491 | 490 | 489 | 488 | 487 | 486 | |
| 95 | 485 | 483 | 482 | 481 | 480 | 479 | 478 | 477 | 476 | 475 | |
| 96 | 474 | 473 | 471 | 470 | 469 | 468 | 467 | 466 | 465 | 464 | |
| 97 | 463 | 462 | 461 | 460 | 459 | 458 | 457 | 456 | 454 | 453 | |
| 98 | 452 | 451 | 450 | 449 | 448 | 447 | 446 | 445 | 444 | 443 | |
| 99 | 442 | 441 | 440 | 439 | 438 | 437 | 436 | 435 | 434 | 433 | |
| 2.00 | 0.00 432 | 431 | 430 | 429 | 428 | 427 | 426 | 425 | 424 | 423 | |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P |

| | |
|---|-----|
| 3 | 0.3 |
| 2 | 0.6 |
| 3 | 0.9 |
| 4 | 1.2 |
| 5 | 1.5 |
| 6 | 1.8 |
| 7 | 2.1 |
| 8 | 2.4 |
| 9 | 2.7 |

$$a > b, \quad A = \log a - \log b, \quad \log(a + b) = \log a + B.$$

ADDITION.

| A | B | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|-----------------|
| 2.0 | 0.00 | 432 | 422 | 413 | 403 | 394 | 385 | 377 | 368 | 360 | 352 | | |
| 1 | | 344 | 336 | 328 | 321 | 313 | 306 | 299 | 293 | 286 | 280 | 1 | 9 8 |
| 2 | | 273 | 267 | 261 | 255 | 249 | 244 | 238 | 233 | 227 | 222 | 2 | 1.8 1.6 |
| 3 | | 217 | 212 | 207 | 203 | 198 | 194 | 189 | 185 | 181 | 177 | 3 | 2.7 2.4 |
| 4 | | 173 | 169 | 165 | 161 | 157 | 154 | 150 | 147 | 144 | 140 | 4 | 3.6 3.2 |
| 5 | | 137 | 134 | 131 | 128 | 125 | 122 | 119 | 117 | 114 | 111 | 5 | 4.5 4.0 |
| 6 | | 109 | 106 | 104 | 102 | 999 | 997 | 995 | 993 | 991 | 989 | 6 | 5.4 4.8 |
| 7 | | 087 | 085 | 083 | 081 | 079 | 077 | 075 | 074 | 072 | 070 | 7 | 6.3 5.6 |
| 8 | | 069 | 067 | 066 | 064 | 063 | 061 | 060 | 059 | 057 | 056 | 8 | 7.2 6.4 |
| 9 | | 055 | 053 | 052 | 051 | 050 | 049 | 048 | 047 | 045 | 044 | 9 | 8.1 7.2 |
| 3.0 | 0.00 | 043 | 042 | 041 | 041 | 040 | 039 | 038 | 037 | 036 | 035 | | |
| 1 | | 034 | 034 | 033 | 032 | 031 | 031 | 030 | 029 | 029 | 028 | 1 | 7 6 5 |
| 2 | | 027 | 027 | 026 | 026 | 025 | 024 | 024 | 023 | 023 | 022 | 2 | 0.7 0.6 0.5 |
| 3 | | 022 | 021 | 021 | 020 | 020 | 019 | 019 | 019 | 018 | 018 | 3 | 1.4 1.2 1.0 |
| 4 | | 017 | 017 | 017 | 016 | 016 | 015 | 015 | 015 | 014 | 014 | 4 | 2.1 1.8 1.5 |
| 5 | | 014 | 013 | 013 | 013 | 013 | 012 | 012 | 012 | 011 | 011 | 5 | 2.8 2.4 2.0 |
| 6 | | 011 | 011 | 010 | 010 | 010 | 010 | 010 | 009 | 009 | 009 | 6 | 3.5 3.0 2.5 |
| 7 | | 009 | 008 | 008 | 008 | 008 | 008 | 008 | 007 | 007 | 007 | 7 | 4.2 3.6 3.0 |
| 8 | | 007 | 007 | 007 | 006 | 006 | 006 | 006 | 006 | 006 | 006 | 8 | 4.9 4.2 3.5 |
| 9 | | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 004 | 9 | 5.6 4.8 4.0 |
| 4.0 | 0.00 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | | |
| 1 | | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | | |
| 2 | | 003 | 003 | 003 | 003 | 002 | 002 | 002 | 002 | 002 | 002 | 1 | 4 3 |
| 3 | | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 2 | 0.4 0.3 |
| 4 | | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 001 | 001 | 001 | 3 | 0.8 0.6 |
| 5 | | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 4 | 1.2 0.9 |
| 6 | | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 5 | 1.6 1.2 |
| 7 | | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 6 | 2.0 1.5 |
| 8 | | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 7 | 2.4 1.8 |
| 9 | | 001 | 001 | 001 | 001 | 000 | 000 | 000 | 000 | 000 | 000 | 8 | 2.8 2.1 |
| 5.0 | 0.00 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 9 | 3.2 2.4 |
| | | | | | | | | | | | | | 3.6 2.7 |
| A | B | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |

 $a > b,$
 $A = \log a - \log b,$
 $\log(a+b) = \log a + B.$

The above table of Addition Logarithms is based on the identity

$$\begin{aligned}\log(a+b) &= \log a \left(1 + \frac{b}{a}\right) \\ &= \log a + \log \left(1 + \frac{1}{\frac{a}{b}}\right).\end{aligned}$$

The argument A is $\log \frac{a}{b}$, and the function B is $\log \left(1 + \frac{1}{\frac{a}{b}}\right)$, conse-

quently

$$\log(a+b) = \log a + B.$$

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
|--|----------|------|------|------|------|------|------|------|------|------|-----|-----|
| 0.350 | 0.25 703 | 695 | 687 | 678 | 670 | 662 | 654 | 646 | 638 | 630 | | |
| 351 | 622 | 614 | 606 | 598 | 590 | 582 | 574 | 566 | 558 | 550 | | |
| 352 | 542 | 534 | 526 | 518 | 510 | 502 | 494 | 486 | 478 | 470 | | |
| 353 | 462 | 454 | 446 | 438 | 430 | 422 | 414 | 406 | 398 | 390 | | |
| 354 | 382 | 374 | 367 | 359 | 351 | 343 | 335 | 327 | 319 | 311 | | 9 |
| 355 | 303 | 295 | 287 | 279 | 272 | 264 | 256 | 248 | 240 | 232 | 1 | 0.9 |
| 356 | 224 | 216 | 209 | 201 | 193 | 185 | 177 | 169 | 161 | 154 | 2 | 1.8 |
| 357 | 146 | 138 | 130 | 122 | 114 | 106 | 99 | 91 | 83 | 75 | 3 | 2.7 |
| 358 | 067 | 060 | 052 | 044 | 036 | 028 | 021 | 013 | 005 | *997 | 4 | 3.6 |
| 359 | 0.24 989 | 982 | 974 | 966 | 958 | 951 | 943 | 935 | 927 | 920 | 5 | 4.5 |
| 0.360 | 912 | 904 | 896 | 889 | 881 | 873 | 865 | 858 | 850 | 842 | 6 | 5.4 |
| 361 | 835 | 827 | 819 | 811 | 804 | 796 | 788 | 781 | 773 | 765 | 7 | 6.3 |
| 362 | 758 | 750 | 742 | 734 | 727 | 719 | 711 | 704 | 696 | 688 | 8 | 7.2 |
| 363 | 681 | 673 | 666 | 658 | 650 | 643 | 635 | 627 | 620 | 612 | 9 | 8.1 |
| 364 | 604 | 597 | 589 | 582 | 574 | 566 | 559 | 551 | 544 | 536 | | |
| 365 | 528 | 521 | 513 | 506 | 498 | 490 | 483 | 475 | 468 | 460 | | |
| 366 | 453 | 445 | 438 | 430 | 422 | 415 | 407 | 400 | 392 | 385 | | 8 |
| 367 | 377 | 370 | 362 | 355 | 347 | 340 | 332 | 325 | 317 | 310 | 1 | 0.8 |
| 368 | 302 | 295 | 287 | 280 | 272 | 265 | 257 | 250 | 242 | 235 | 2 | 1.6 |
| 369 | 227 | 220 | 212 | 205 | 197 | 190 | 182 | 175 | 168 | 160 | 3 | 2.4 |
| 0.370 | 153 | 145 | 138 | 130 | 123 | 116 | 108 | 101 | 093 | 086 | 4 | 3.2 |
| 371 | 078 | 071 | 064 | 056 | 049 | 041 | 034 | 027 | 019 | 012 | 5 | 4.0 |
| 372 | 004 | *997 | *990 | *982 | *975 | *968 | *960 | *953 | *946 | *938 | 6 | 4.8 |
| 373 | 0.23 931 | 923 | 916 | 909 | 901 | 894 | 887 | 879 | 872 | 865 | 7 | 5.6 |
| 374 | 857 | 850 | 843 | 836 | 828 | 821 | 814 | 806 | 799 | 792 | 8 | 6.4 |
| 375 | 784 | 777 | 770 | 763 | 755 | 748 | 741 | 733 | 726 | 719 | 9 | 7.2 |
| 376 | 712 | 704 | 697 | 690 | 683 | 675 | 668 | 661 | 654 | 646 | | |
| 377 | 639 | 632 | 625 | 617 | 610 | 603 | 596 | 589 | 581 | 574 | | |
| 378 | 567 | 560 | 553 | 545 | 538 | 531 | 524 | 517 | 509 | 502 | | |
| 379 | 495 | 488 | 481 | 474 | 466 | 459 | 452 | 445 | 438 | 431 | 1 | 0.7 |
| 0.380 | 423 | 416 | 409 | 402 | 395 | 388 | 381 | 373 | 366 | 359 | 2 | 1.4 |
| 381 | 352 | 345 | 338 | 331 | 324 | 317 | 309 | 302 | 295 | 288 | 3 | 2.1 |
| 382 | 281 | 274 | 267 | 260 | 253 | 246 | 238 | 231 | 224 | 217 | 4 | 2.8 |
| 383 | 210 | 203 | 196 | 189 | 182 | 175 | 168 | 161 | 154 | 147 | 5 | 3.5 |
| 384 | 140 | 133 | 126 | 119 | 112 | 105 | 098 | 091 | 083 | 076 | 6 | 4.2 |
| 385 | 069 | 062 | 055 | 048 | 041 | 034 | 027 | 020 | 013 | 006 | 7 | 4.9 |
| 386 | 000 | *993 | *986 | *979 | *972 | *965 | *958 | *951 | *944 | *937 | 8 | 5.6 |
| 387 | 0.22 930 | 923 | 916 | 909 | 902 | 895 | 888 | 881 | 874 | 867 | 9 | 6.3 |
| 388 | 860 | 853 | 847 | 840 | 833 | 826 | 819 | 812 | 805 | 798 | | |
| 389 | 791 | 784 | 777 | 771 | 764 | 757 | 750 | 743 | 736 | 729 | | |
| 0.390 | 722 | 716 | 709 | 702 | 695 | 688 | 681 | 674 | 667 | 661 | 1 | 0.6 |
| 391 | 654 | 647 | 640 | 633 | 626 | 620 | 613 | 606 | 599 | 592 | 2 | 1.2 |
| 392 | 585 | 579 | 572 | 565 | 558 | 551 | 545 | 538 | 531 | 524 | 3 | 1.8 |
| 393 | 517 | 511 | 504 | 497 | 490 | 483 | 477 | 470 | 463 | 456 | 4 | 2.4 |
| 394 | 450 | 443 | 436 | 429 | 422 | 416 | 409 | 402 | 395 | 389 | 5 | 3.0 |
| 395 | 382 | 375 | 369 | 362 | 355 | 348 | 342 | 335 | 328 | 321 | 6 | 3.6 |
| 396 | 315 | 308 | 301 | 295 | 288 | 281 | 274 | 268 | 261 | 254 | 7 | 4.2 |
| 397 | 248 | 241 | 234 | 228 | 221 | 214 | 208 | 201 | 194 | 188 | 8 | 4.8 |
| 398 | 181 | 174 | 168 | 161 | 154 | 148 | 141 | 134 | 128 | 121 | 9 | 5.4 |
| 399 | 114 | 108 | 101 | 094 | 088 | 081 | 075 | 068 | 061 | 055 | | |
| 0.400 | 0.22 048 | 041 | 035 | 028 | 022 | 015 | 008 | 002 | *995 | *989 | | |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | |
| $a > b$ Put $x = \log a - \log b$ | | | | | | | | | | | | |
| If $x > .3$, then $x = A$ and $\log (a - b) = \log a - B$ | | | | | | | | | | | | |
| If $x < .3$, then $x = B$ and $\log (a - b) = \log a - A$ | | | | | | | | | | | | |

SUBTRACTION.

| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |
|------|----------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|
| 0.50 | 0.16 509 | 463 | 417 | 371 | 325 | 280 | 234 | 189 | 144 | 099 | | | | | |
| 51 | 054 | 009 | *965 | *921 | *876 | *832 | *788 | *745 | *701 | *657 | | 46 | 45 | 44 | 43 |
| 52 | 0.15 614 | 571 | 528 | 485 | 442 | 400 | 357 | 315 | 273 | 230 | 1 | 4.6 | 4.5 | 4.4 | 4.3 |
| 53 | 189 | 147 | 105 | 064 | 022 | *981 | *940 | *899 | *858 | *817 | 2 | 9.2 | 9.0 | 8.8 | 8.6 |
| 54 | 0.14 777 | 736 | 696 | 656 | 616 | 576 | 536 | 496 | 457 | 417 | 3 | 13.8 | 13.5 | 13.2 | 12.9 |
| 55 | 378 | 339 | 300 | 261 | 222 | 183 | 145 | 106 | 068 | 030 | 4 | 18.4 | 18.0 | 17.6 | 17.2 |
| 56 | 0.13 992 | 954 | 916 | 878 | 840 | 803 | 766 | 728 | 691 | 654 | 5 | 23.0 | 22.5 | 22.0 | 21.5 |
| 57 | 617 | 581 | 544 | 507 | 471 | 435 | 398 | 362 | 326 | 291 | 6 | 27.6 | 27.0 | 26.4 | 25.8 |
| 58 | 255 | 219 | 184 | 148 | 113 | 078 | 043 | 008 | *973 | *938 | 7 | 32.2 | 31.5 | 30.8 | 30.1 |
| 59 | 0.12 903 | 869 | 834 | 800 | 766 | 732 | 698 | 664 | 630 | 596 | 8 | 36.8 | 36.0 | 35.2 | 34.4 |
| | | | | | | | | | | | 9 | 41.4 | 40.5 | 39.6 | 38.7 |
| 0.60 | 563 | 529 | 496 | 463 | 429 | 396 | 363 | 330 | 298 | 265 | | | | | |
| 61 | 232 | 200 | 168 | 135 | 103 | 071 | 039 | 007 | *975 | *944 | | 42 | 41 | 40 | 39 |
| 62 | 0.11 912 | 880 | 849 | 818 | 786 | 755 | 724 | 693 | 663 | 632 | 1 | 4.2 | 4.1 | 4.0 | 3.9 |
| 63 | 601 | 571 | 540 | 510 | 479 | 449 | 419 | 389 | 359 | 329 | 2 | 8.4 | 8.2 | 8.0 | 7.8 |
| 64 | 299 | 270 | 240 | 211 | 181 | 152 | 123 | 094 | 065 | 036 | 3 | 12.6 | 12.3 | 12.0 | 11.7 |
| 65 | 007 | *978 | *949 | *921 | *892 | *864 | *835 | *807 | *779 | *750 | 4 | 16.8 | 16.4 | 16.0 | 15.6 |
| 66 | 0.10 722 | 694 | 667 | 639 | 611 | 583 | 556 | 528 | 501 | 474 | 5 | 21.0 | 20.5 | 20.0 | 19.5 |
| 67 | 446 | 419 | 392 | 365 | 338 | 312 | 285 | 258 | 231 | 205 | 6 | 25.2 | 24.6 | 24.0 | 23.4 |
| 68 | 178 | 152 | 126 | 100 | 073 | 047 | 021 | *995 | *970 | *944 | 7 | 29.4 | 28.7 | 28.0 | 27.3 |
| 69 | 0.09 918 | 893 | 867 | 842 | 816 | 791 | 766 | 740 | 715 | 690 | 8 | 33.6 | 32.8 | 32.0 | 31.2 |
| | | | | | | | | | | | 9 | 37.8 | 36.9 | 36.0 | 35.1 |
| 0.70 | 665 | 640 | 616 | 591 | 566 | 542 | 517 | 493 | 468 | 444 | | | | | |
| 71 | 420 | 395 | 371 | 347 | 323 | 299 | 275 | 252 | 228 | 204 | | 38 | 37 | 36 | 35 |
| 72 | 181 | 157 | 134 | 110 | 087 | 064 | 041 | 018 | *995 | *972 | 1 | 3.8 | 3.7 | 3.6 | 3.5 |
| 73 | 0.08 949 | 926 | 903 | 880 | 858 | 835 | 813 | 790 | 768 | 745 | 2 | 7.6 | 7.4 | 7.2 | 7.0 |
| 74 | 723 | 701 | 679 | 657 | 635 | 613 | 591 | 569 | 547 | 525 | 3 | 11.4 | 11.1 | 10.8 | 10.5 |
| 75 | 504 | 482 | 461 | 439 | 418 | 396 | 375 | 354 | 333 | 311 | 4 | 15.2 | 14.8 | 14.4 | 14.0 |
| 76 | 290 | 269 | 248 | 228 | 207 | 186 | 165 | 145 | 124 | 103 | 5 | 19.0 | 18.5 | 18.0 | 17.5 |
| 77 | 083 | 063 | 042 | 022 | 002 | *981 | *961 | *941 | *921 | *901 | 6 | 22.8 | 22.2 | 21.6 | 21.0 |
| 78 | 0.07 881 | 861 | 842 | 822 | 802 | 782 | 763 | 743 | 724 | 704 | 7 | 26.6 | 25.9 | 25.2 | 24.5 |
| 79 | 685 | 666 | 646 | 627 | 608 | 589 | 570 | 551 | 532 | 513 | 8 | 30.4 | 29.6 | 28.8 | 28.0 |
| | | | | | | | | | | | 9 | 34.2 | 33.3 | 32.4 | 31.5 |
| 0.80 | 494 | 475 | 456 | 438 | 419 | 401 | 382 | 363 | 345 | 327 | | | | | |
| 81 | 308 | 290 | 272 | 253 | 235 | 217 | 199 | 181 | 163 | 145 | | 34 | 33 | 32 | 31 |
| 82 | 127 | 110 | 092 | 074 | 056 | 039 | 021 | 004 | *986 | *969 | 1 | 3.4 | 3.3 | 3.2 | 3.1 |
| 83 | 0.06 951 | 934 | 917 | 900 | 882 | 865 | 848 | 831 | 814 | 797 | 2 | 6.8 | 6.6 | 6.4 | 6.2 |
| 84 | 780 | 763 | 747 | 730 | 713 | 696 | 680 | 663 | 647 | 630 | 3 | 10.2 | 9.9 | 9.6 | 9.3 |
| 85 | 614 | 597 | 581 | 564 | 548 | 532 | 516 | 499 | 483 | 467 | 4 | 13.6 | 13.2 | 12.8 | 12.4 |
| 86 | 451 | 435 | 419 | 403 | 387 | 372 | 356 | 340 | 324 | 309 | 5 | 17.0 | 16.5 | 16.0 | 15.5 |
| 87 | 293 | 278 | 262 | 247 | 231 | 216 | 200 | 185 | 170 | 155 | 6 | 20.4 | 19.8 | 19.2 | 18.6 |
| 88 | 139 | 124 | 109 | 094 | 079 | 064 | 049 | 034 | 019 | 004 | 7 | 23.8 | 23.1 | 22.4 | 21.7 |
| 89 | 0.05 989 | 975 | 960 | 945 | 931 | 916 | 901 | 887 | 872 | 858 | 8 | 27.2 | 26.4 | 25.6 | 24.8 |
| | | | | | | | | | | | 9 | 30.6 | 29.7 | 28.8 | 27.9 |
| 0.90 | 844 | 829 | 815 | 800 | 786 | 772 | 758 | 744 | 730 | 715 | | | | | |
| 91 | 701 | 687 | 673 | 659 | 646 | 632 | 618 | 604 | 590 | 577 | | 30 | 29 | 28 | 27 |
| 92 | 563 | 549 | 536 | 522 | 509 | 495 | 482 | 468 | 455 | 441 | 1 | 3.0 | 2.9 | 2.8 | 2.7 |
| 93 | 428 | 415 | 401 | 388 | 375 | 362 | 349 | 336 | 323 | 310 | 2 | 6.0 | 5.8 | 5.6 | 5.4 |
| 94 | 297 | 284 | 271 | 258 | 245 | 232 | 219 | 207 | 194 | 181 | 3 | 9.0 | 8.7 | 8.4 | 8.1 |
| 95 | 169 | 156 | 143 | 131 | 118 | 106 | 093 | 081 | 069 | 056 | 4 | 12.0 | 11.6 | 11.2 | 10.8 |
| 96 | 044 | 032 | 019 | 007 | *995 | *983 | *970 | *958 | *946 | *934 | 5 | 15.0 | 14.5 | 14.0 | 13.5 |
| 97 | 0.04 922 | 910 | 898 | 886 | 874 | 863 | 851 | 839 | 827 | 815 | 6 | 18.0 | 17.4 | 16.8 | 16.2 |
| 98 | 804 | 792 | 780 | 769 | 757 | 746 | 734 | 723 | 711 | 700 | 7 | 21.0 | 20.3 | 19.6 | 18.9 |
| 99 | 688 | 677 | 666 | 654 | 643 | 632 | 620 | 609 | 598 | 587 | 8 | 24.0 | 23.2 | 22.4 | 21.6 |
| | | | | | | | | | | | 9 | 27.0 | 26.1 | 25.2 | 24.3 |
| 1.00 | 0.04 576 | 565 | 554 | 543 | 532 | 521 | 510 | 499 | 488 | 477 | | | | | |
| A | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P P | | | | |

If $x > .3$,
 If $x < .3$,

$a > b$.
 then
 then

Put
 $x = A$
 $x = B$

$x = \log a - \log b$.
 and
 and

$\log(a - b) = \log a - B$.
 $\log(a - b) = \log a - A$.

SUBTRACTION.

| A | B | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|-----|
| 2.0 | 0.00 | 436 | 426 | 417 | 407 | 398 | 389 | 380 | 371 | 363 | 354 | 9 | 8 |
| 1 | 346 | 338 | 331 | 323 | 316 | 309 | 302 | 295 | 288 | 281 | | 1 | 0.9 |
| 2 | 275 | 266 | 262 | 256 | 251 | 245 | 239 | 234 | 229 | 223 | | 2 | 1.8 |
| 3 | 218 | 213 | 208 | 204 | 199 | 194 | 190 | 186 | 181 | 177 | | 3 | 2.7 |
| 4 | 173 | 166 | 165 | 162 | 158 | 154 | 151 | 147 | 144 | 141 | | 4 | 3.6 |
| 5 | 138 | 134 | 131 | 128 | 125 | 123 | 120 | 117 | 114 | 112 | | 5 | 4.5 |
| 6 | 109 | 107 | 104 | 102 | 100 | 097 | 095 | 093 | 091 | 089 | | 6 | 5.4 |
| 7 | 087 | 085 | 083 | 081 | 079 | 077 | 076 | 074 | 072 | 070 | | 7 | 6.3 |
| 8 | 069 | 067 | 066 | 064 | 063 | 061 | 060 | 059 | 057 | 056 | | 8 | 7.2 |
| 9 | 055 | 053 | 052 | 051 | 050 | 049 | 048 | 047 | 046 | 044 | | 9 | 8.1 |
| 3.0 | 0.00 | 043 | 042 | 041 | 041 | 040 | 039 | 038 | 037 | 036 | 035 | 7 | 6 |
| 1 | 035 | 034 | 033 | 032 | 031 | 031 | 030 | 029 | 029 | 028 | | 1 | 0.7 |
| 2 | 027 | 027 | 026 | 026 | 025 | 024 | 024 | 023 | 023 | 022 | | 2 | 1.4 |
| 3 | 022 | 021 | 021 | 020 | 020 | 019 | 019 | 019 | 018 | 018 | | 3 | 2.1 |
| 4 | 017 | 017 | 017 | 016 | 016 | 015 | 015 | 015 | 014 | 014 | | 4 | 2.8 |
| 5 | 014 | 013 | 013 | 013 | 013 | 012 | 012 | 012 | 011 | 011 | | 5 | 3.5 |
| 6 | 011 | 011 | 010 | 010 | 010 | 010 | 010 | 009 | 009 | 009 | | 6 | 4.2 |
| 7 | 009 | 008 | 008 | 008 | 008 | 008 | 008 | 007 | 007 | 007 | | 7 | 4.9 |
| 8 | 007 | 007 | 007 | 006 | 006 | 006 | 006 | 006 | 006 | 006 | | 8 | 5.6 |
| 9 | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 005 | 004 | | 9 | 6.3 |
| 4.0 | 0.00 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 004 | 4 | 3 |
| 1 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | 003 | | 1 | 0.4 |
| 2 | 003 | 003 | 003 | 003 | 002 | 002 | 002 | 002 | 002 | 002 | | 2 | 0.8 |
| 3 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | | 3 | 1.2 |
| 4 | 002 | 002 | 002 | 002 | 002 | 002 | 002 | 001 | 001 | 001 | | 4 | 1.6 |
| 5 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | | 5 | 2.0 |
| 6 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | | 6 | 2.4 |
| 7 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | | 7 | 2.8 |
| 8 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | | 8 | 3.2 |
| 9 | 001 | 001 | 001 | 001 | 000 | 000 | 000 | 000 | 000 | 000 | | 9 | 3.6 |
| 5.0 | 0.00 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | 000 | | | |
| A | B | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P | P |

$$a > b, \quad A = \log a - \log b, \quad \log(a - b) = \log a - B.$$

$$\text{or} \quad B = \log a - \log b, \quad \log(a - b) = \log a - A.$$

The above table of Subtraction Logarithms is based on the identity

$$\log(a - b) = \log\left(\frac{a}{\frac{x}{x-1}}\right) = \log a - \log\left(\frac{x}{x-1}\right),$$

where $x = \frac{a}{b}$.

The argument is $\log x$, and the function is $\log\left(\frac{x}{x-1}\right)$.

A is the argument and B the function when $\log x > .3$, and

B is the argument and A the function when $\log x < .3$.

III

TABLE OF THE LOGARITHMS

OF THE

TRIGONOMETRIC FUNCTIONS

FROM 0° TO 1° AND 89° TO 90° FOR EVERY SECOND,

AND

FROM 1° TO 6° AND 84° TO 89° FOR EVERY TEN SECONDS.

| L Cos | | *90 | L Sin | | | | 0° | | L Tan | | | | 180° | *270° |
|-------|-----|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|
| 0.00 | ' " | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" | 10" | | |
| 000 | 0 | — | 68557 | 98660 | *16270 | *28763 | *38454 | *46373 | *53067 | *58866 | *63982 | *68557 | 50 | |
| 000 | 10 | 5.68557 | 72697 | 76476 | 79952 | 83170 | 86167 | 88969 | 91602 | 94085 | 96433 | 98660 | 40 | |
| 000 | 20 | 98660 | *00779 | *02800 | *04730 | *06579 | *08351 | *10055 | *11694 | *13273 | *14797 | *16270 | 30 | |
| 000 | 30 | 6.16270 | 17694 | 19072 | 20409 | 21705 | 22964 | 24188 | 25378 | 26536 | 27664 | 28763 | 20 | |
| 000 | 40 | 28763 | 29836 | 30882 | 31904 | 32903 | 33879 | 34833 | 35767 | 36682 | 37577 | 38454 | 10 | |
| 000 | 50 | 38454 | 39315 | 40158 | 40985 | 41797 | 42594 | 43376 | 44145 | 44900 | 45643 | 46373 | 0 | 59 |
| 000 | 1 | 0.4 6373 | 7090 | 7797 | 8492 | 9175 | 9849 | *0512 | *1165 | *1808 | *2442 | *3067 | 50 | |
| 000 | 10 | 6.5 3067 | 3683 | 4291 | 4890 | 5481 | 6064 | 6639 | 7207 | 7767 | 8320 | 8860 | 40 | |
| 000 | 20 | 8866 | 9406 | 9939 | *0465 | *0985 | *1499 | *2007 | *2509 | *3006 | *3496 | *3982 | 30 | |
| 000 | 30 | 6.6 3982 | 4462 | 4936 | 5406 | 5870 | 6330 | 6785 | 7235 | 7680 | 8121 | 8557 | 20 | |
| 000 | 40 | 8557 | 8990 | 9418 | 9841 | *0261 | *0676 | *1088 | *1496 | *1900 | *2300 | *2697 | 10 | |
| 000 | 50 | 6.7 2697 | 3090 | 3479 | 3865 | 4248 | 4627 | 5003 | 5376 | 5746 | 6112 | 6476 | 0 | 58 |
| 000 | 2 | 0. 6476 | 6836 | 7193 | 7548 | 7900 | 8248 | 8595 | 8938 | 9278 | 9616 | 9952 | 50 | |
| 000 | 10 | 9952 | *0285 | *0615 | *0943 | *1268 | *1591 | *1911 | *2230 | *2545 | *2859 | *3170 | 40 | |
| 000 | 20 | 6.8 3170 | 3479 | 3786 | 4091 | 4394 | 4694 | 4993 | 5289 | 5584 | 5876 | 6167 | 30 | |
| 000 | 30 | 6167 | 6455 | 6742 | 7027 | 7310 | 7591 | 7870 | 8147 | 8423 | 8697 | 8969 | 20 | |
| 000 | 40 | 8969 | 9240 | 9509 | 9776 | *0042 | *0306 | *0568 | *0829 | *1088 | *1346 | *1602 | 10 | |
| 000 | 50 | 6.9 1602 | 1857 | 2110 | 2362 | 2612 | 2861 | 3109 | 3355 | 3599 | 3843 | 4085 | 0 | 57 |
| 000 | 3 | 0. 4085 | 4325 | 4565 | 4803 | 5039 | 5275 | 5509 | 5742 | 5973 | 6204 | 6433 | 50 | |
| 000 | 10 | 6433 | 6661 | 6888 | 7113 | 7338 | 7561 | 7783 | 8004 | 8224 | 8443 | 8660 | 40 | |
| 000 | 20 | 8660 | 8877 | 9093 | 9307 | 9520 | 9733 | 9944 | *0155 | *0364 | *0572 | *0779 | 30 | |
| 000 | 30 | 7.0 0779 | 0986 | 1191 | 1395 | 1599 | 1801 | 2003 | 2203 | 2403 | 2602 | 2800 | 20 | |
| 000 | 40 | 2800 | 2997 | 3193 | 3388 | 3582 | 3776 | 3968 | 4160 | 4351 | 4541 | 4730 | 10 | |
| 000 | 50 | 4730 | 4919 | 5106 | 5293 | 5479 | 5664 | 5849 | 6032 | 6215 | 6397 | 6579 | 0 | 56 |
| 000 | 4 | 0. 6579 | 6759 | 6939 | 7118 | 7296 | 7474 | 7651 | 7827 | 8003 | 8177 | 8351 | 50 | |
| 000 | 10 | 8351 | 8525 | 8698 | 8870 | 9041 | 9211 | 9381 | 9551 | 9719 | 9887 | *0055 | 40 | |
| 000 | 20 | 7.1 0055 | 0222 | 0388 | 0553 | 0718 | 0882 | 1046 | 1209 | 1371 | 1533 | 1694 | 30 | |
| 000 | 30 | 1694 | 1854 | 2014 | 2174 | 2333 | 2491 | 2648 | 2805 | 2962 | 3118 | 3273 | 20 | |
| 000 | 40 | 3273 | 3428 | 3582 | 3736 | 3889 | 4042 | 4194 | 4346 | 4497 | 4647 | 4797 | 10 | |
| 000 | 50 | 4797 | 4947 | 5096 | 5244 | 5392 | 5540 | 5687 | 5833 | 5979 | 6125 | 6270 | 0 | 55 |
| 0.00 | | 10" | 9" | 8" | 7" | 6" | 5" | 4" | 3" | 2" | 1" | 0" | ' " | |

L Sin

L Cos

89°

L Cot

*179°

269°

*359°

| | 144 | 143 | 142 | 141 | 140 | 139 | 138 | 137 | 136 | 135 | 134 | 133 | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---|
| 1 | 14.4 | 14.3 | 14.2 | 14.1 | 14.0 | 13.9 | 13.8 | 13.7 | 13.6 | 13.5 | 13.4 | 13.3 | 1 |
| 2 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 27.0 | 26.8 | 26.6 | 2 |
| 3 | 43.2 | 42.9 | 42.6 | 42.3 | 42.0 | 41.7 | 41.4 | 41.1 | 40.8 | 40.5 | 40.2 | 39.9 | 3 |
| 4 | 57.6 | 57.2 | 56.8 | 56.4 | 56.0 | 55.6 | 55.2 | 54.8 | 54.4 | 54.0 | 53.6 | 53.2 | 4 |
| 5 | 72.0 | 71.5 | 71.0 | 70.5 | 70.0 | 69.5 | 69.0 | 68.5 | 68.0 | 67.5 | 67.0 | 66.5 | 5 |
| 6 | 86.4 | 85.8 | 85.2 | 84.6 | 84.0 | 83.4 | 82.8 | 82.2 | 81.6 | 81.0 | 80.4 | 79.8 | 6 |
| 7 | 100.8 | 100.1 | 99.4 | 98.7 | 98.0 | 97.3 | 96.6 | 95.9 | 95.2 | 94.5 | 93.8 | 93.1 | 7 |
| 8 | 115.2 | 114.4 | 113.6 | 112.8 | 112.0 | 111.2 | 110.4 | 109.6 | 108.8 | 108.0 | 107.2 | 106.4 | 8 |
| 9 | 129.6 | 128.7 | 127.8 | 126.9 | 126.0 | 125.1 | 124.2 | 123.3 | 122.4 | 121.5 | 120.6 | 119.7 | 9 |
| | 132 | 131 | 130 | 129 | 128 | 127 | 126 | 125 | 124 | 123 | 122 | 121 | |
| 1 | 13.2 | 13.1 | 13.0 | 12.9 | 12.8 | 12.7 | 12.6 | 12.5 | 12.4 | 12.3 | 12.2 | 12.1 | 1 |
| 2 | 26.4 | 26.2 | 26.0 | 25.8 | 25.6 | 25.4 | 25.2 | 25.0 | 24.8 | 24.6 | 24.4 | 24.2 | 2 |
| 3 | 39.6 | 39.3 | 39.0 | 38.7 | 38.4 | 38.1 | 37.8 | 37.5 | 37.2 | 36.9 | 36.6 | 36.3 | 3 |
| 4 | 52.8 | 52.4 | 52.0 | 51.6 | 51.2 | 50.8 | 50.4 | 50.0 | 49.6 | 49.2 | 48.8 | 48.4 | 4 |
| 5 | 66.0 | 65.5 | 65.0 | 64.5 | 64.0 | 63.5 | 63.0 | 62.5 | 62.0 | 61.5 | 61.0 | 60.5 | 5 |
| 6 | 79.2 | 78.6 | 78.0 | 77.4 | 76.8 | 76.2 | 75.6 | 75.0 | 74.4 | 73.8 | 73.2 | 72.6 | 6 |
| 7 | 92.4 | 91.7 | 91.0 | 90.3 | 89.6 | 88.9 | 88.2 | 87.5 | 86.8 | 86.1 | 85.4 | 84.7 | 7 |
| 8 | 105.6 | 104.8 | 104.0 | 103.2 | 102.4 | 101.6 | 100.8 | 100.0 | 99.2 | 98.4 | 97.6 | 96.8 | 8 |
| 9 | 118.8 | 117.9 | 117.0 | 116.1 | 115.2 | 114.3 | 113.4 | 112.5 | 111.6 | 110.7 | 109.8 | 108.9 | 9 |
| | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | 112 | 111 | 110 | 109 | |
| 1 | 12.0 | 11.9 | 11.8 | 11.7 | 11.6 | 11.5 | 11.4 | 11.3 | 11.2 | 11.1 | 11.0 | 10.9 | 1 |
| 2 | 24.0 | 23.8 | 23.6 | 23.4 | 23.2 | 23.0 | 22.8 | 22.6 | 22.4 | 22.2 | 22.0 | 21.8 | 2 |
| 3 | 36.0 | 35.7 | 35.4 | 35.1 | 34.8 | 34.5 | 34.2 | 33.9 | 33.6 | 33.3 | 33.0 | 32.7 | 3 |
| 4 | 48.0 | 47.6 | 47.2 | 46.8 | 46.4 | 46.0 | 45.6 | 45.2 | 44.8 | 44.4 | 44.0 | 43.6 | 4 |
| 5 | 60.0 | 59.5 | 59.0 | 58.5 | 58.0 | 57.5 | 57.0 | 56.5 | 56.0 | 55.5 | 55.0 | 54.5 | 5 |
| 6 | 72.0 | 71.4 | 70.8 | 70.2 | 69.6 | 69.0 | 68.4 | 67.8 | 67.2 | 66.6 | 66.0 | 65.4 | 6 |
| 7 | 84.0 | 83.3 | 82.6 | 81.9 | 81.2 | 80.5 | 79.8 | 79.1 | 78.4 | 77.7 | 77.0 | 76.3 | 7 |
| 8 | 96.0 | 95.2 | 94.4 | 93.6 | 92.8 | 92.0 | 91.2 | 90.4 | 89.6 | 88.8 | 88.0 | 87.2 | 8 |
| 9 | 108.0 | 107.1 | 106.2 | 105.3 | 104.4 | 103.5 | 102.6 | 101.7 | 100.8 | 99.9 | 99.0 | 98.1 | 9 |

| 0.00 | ' | " | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" | 10" | | |
|------|----|---|-----|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 000 | 5 | 0 | 7.1 | 6270 | 6414 | 6558 | 6702 | 6845 | 6987 | 7130 | 7271 | 7413 | 7553 | 7694 | 50 |
| 000 | 10 | | | 7694 | 7834 | 7973 | 8112 | 8250 | 8389 | 8526 | 8663 | 8800 | 8937 | 9072 | 40 |
| 000 | 20 | | | 9072 | 9208 | 9343 | 9478 | 9612 | 9746 | 9879 | *0012 | *0145 | *0277 | *0409 | 30 |
| 000 | 30 | | 7.2 | 0409 | 0540 | 0671 | 0802 | 0932 | 1062 | 1191 | 1320 | 1449 | 1577 | 1705 | 20 |
| 000 | 40 | | | 1705 | 1833 | 1960 | 2087 | 2213 | 2339 | 2465 | 2590 | 2715 | 2840 | 2964 | 10 |
| 000 | 50 | | | 2964 | 3088 | 3212 | 3335 | 3458 | 3580 | 3702 | 3824 | 3946 | 4067 | 4188 | 0 54 |
| | | | | | | | | | | | | | | | |
| 000 | 6 | 0 | | 4188 | 4308 | 4428 | 4548 | 4668 | 4787 | 4906 | 5024 | 5142 | 5260 | 5378 | 50 |
| 000 | 10 | | | 5378 | 5495 | 5612 | 5728 | 5845 | 5961 | 6076 | 6192 | 6307 | 6421 | 6536 | 40 |
| 000 | 20 | | | 6536 | 6650 | 6764 | 6877 | 6991 | 7104 | 7216 | 7329 | 7441 | 7552 | 7664 | 30 |
| 000 | 30 | | | 7664 | 7775 | 7886 | 7997 | 8107 | 8217 | 8327 | 8437 | 8546 | 8655 | 8763 | 20 |
| 000 | 40 | | | 8763 | 8872 | 8980 | 9088 | 9196 | 9303 | 9410 | 9517 | 9623 | 9730 | 9836 | 10 |
| 000 | 50 | | | 9836 | 9942 | *0047 | *0152 | *0257 | *0362 | *0467 | *0571 | *0675 | *0779 | *0882 | 0 53 |
| | | | | | | | | | | | | | | | |
| 000 | 7 | 0 | 7.3 | 0882 | 0986 | 1089 | 1191 | 1294 | 1396 | 1498 | 1600 | 1702 | 1803 | 1904 | 50 |
| 000 | 10 | | | 1904 | 2005 | 2106 | 2206 | 2306 | 2406 | 2506 | 2606 | 2705 | 2804 | 2903 | 40 |
| 000 | 20 | | | 2903 | 3001 | 3100 | 3198 | 3296 | 3393 | 3491 | 3588 | 3685 | 3782 | 3879 | 30 |
| 000 | 30 | | | 3879 | 3975 | 4071 | 4167 | 4263 | 4359 | 4454 | 4549 | 4644 | 4739 | 4833 | 20 |
| 000 | 40 | | | 4833 | 4928 | 5022 | 5116 | 5209 | 5303 | 5396 | 5489 | 5582 | 5675 | 5767 | 10 |
| 000 | 50 | | | 5767 | 5860 | 5952 | 6044 | 6135 | 6227 | 6318 | 6409 | 6500 | 6591 | 6682 | 0 52 |
| | | | | | | | | | | | | | | | |
| 000 | 8 | 0 | | 6682 | 6772 | 6862 | 6952 | 7042 | 7132 | 7221 | 7310 | 7399 | 7488 | 7577 | 50 |
| 000 | 10 | | | 7577 | 7666 | 7754 | 7842 | 7930 | 8018 | 8106 | 8193 | 8280 | 8367 | 8454 | 40 |
| 000 | 20 | | | 8454 | 8541 | 8628 | 8714 | 8800 | 8887 | 8972 | 9058 | 9144 | 9229 | 9314 | 30 |
| 000 | 30 | | | 9314 | 9400 | 9484 | 9569 | 9654 | 9738 | 9822 | 9906 | 9990 | *0074 | *0158 | 20 |
| 000 | 40 | | 7.4 | 0158 | 0241 | 0324 | 0408 | 0491 | 0573 | 0656 | 0739 | 0821 | 0903 | 0985 | 10 |
| 000 | 50 | | | 0985 | 1067 | 1149 | 1230 | 1312 | 1393 | 1474 | 1555 | 1636 | 1716 | 1797 | 0 51 |
| | | | | | | | | | | | | | | | |
| 000 | 9 | 0 | | 1797 | 1877 | 1957 | 2037 | 2117 | 2197 | 2277 | 2356 | 2435 | 2515 | 2594 | 50 |
| 000 | 10 | | | 2594 | 2673 | 2751 | 2830 | 2908 | 2987 | 3065 | 3143 | 3221 | 3299 | 3376 | 40 |
| 000 | 20 | | | 3376 | 3454 | 3531 | 3608 | 3685 | 3762 | 3839 | 3916 | 3992 | 4069 | 4145 | 30 |
| 000 | 30 | | | 4145 | 4221 | 4297 | 4373 | 4449 | 4524 | 4600 | 4675 | 4750 | 4825 | 4900 | 20 |
| 000 | 40 | | | 4900 | 4975 | 5050 | 5124 | 5199 | 5273 | 5347 | 5421 | 5495 | 5569 | 5643 | 10 |
| 000 | 50 | | | 5643 | 5716 | 5790 | 5863 | 5936 | 6009 | 6082 | 6155 | 6228 | 6300 | 6373 | 0 50 |
| 0.00 | | | 10" | 9" | 8" | 7" | 6" | 5" | | 1 | 3 | 2" | 1 | 0" | |

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*90° 180° *270°

| | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 99 | 98 | 97 | 96 |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 10.8 | 10.7 | 10.6 | 10.5 | 10.4 | 10.3 | 10.2 | 10.1 | 9.9 | 9.8 | 9.7 | 9.6 |
| 2 | 21.6 | 21.4 | 21.2 | 21.0 | 20.8 | 20.6 | 20.4 | 20.2 | 19.8 | 19.6 | 19.4 | 19.2 |
| 3 | 32.4 | 32.1 | 31.8 | 31.5 | 31.2 | 30.9 | 30.6 | 30.3 | 29.7 | 29.4 | 29.1 | 28.8 |
| 4 | 43.2 | 42.8 | 42.4 | 42.0 | 41.6 | 41.2 | 40.8 | 40.4 | 39.6 | 39.2 | 38.8 | 38.4 |
| 5 | 54.0 | 53.5 | 53.0 | 52.5 | 52.0 | 51.5 | 51.0 | 50.5 | 49.5 | 49.0 | 48.5 | 48.0 |
| 6 | 64.8 | 64.2 | 63.6 | 63.0 | 62.4 | 61.8 | 61.2 | 60.6 | 59.4 | 58.8 | 58.2 | 57.6 |
| 7 | 75.6 | 74.9 | 74.2 | 73.5 | 72.8 | 72.1 | 71.4 | 70.7 | 69.3 | 68.6 | 67.9 | 67.2 |
| 8 | 86.4 | 85.6 | 84.8 | 84.0 | 83.2 | 82.4 | 81.6 | 80.8 | 79.2 | 78.4 | 77.6 | 76.8 |
| 9 | 97.2 | 96.3 | 95.4 | 94.5 | 93.6 | 92.7 | 91.8 | 90.9 | 89.1 | 88.2 | 87.3 | 86.4 |
| | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 |
| 1 | 9.5 | 9.4 | 9.3 | 9.2 | 9.1 | 9.0 | 8.9 | 8.8 | 8.7 | 8.6 | 8.5 | 8.4 |
| 2 | 19.0 | 18.8 | 18.6 | 18.4 | 18.2 | 18.0 | 17.8 | 17.6 | 17.4 | 17.2 | 17.0 | 16.8 |
| 3 | 28.5 | 28.2 | 27.9 | 27.6 | 27.3 | 27.0 | 26.7 | 26.4 | 26.1 | 25.8 | 25.5 | 25.2 |
| 4 | 38.0 | 37.6 | 37.2 | 36.8 | 36.4 | 36.0 | 35.6 | 35.2 | 34.8 | 34.4 | 34.0 | 33.6 |
| 5 | 47.5 | 47.0 | 46.5 | 46.0 | 45.5 | 45.0 | 44.5 | 44.0 | 43.5 | 43.0 | 42.5 | 42.0 |
| 6 | 57.0 | 56.4 | 55.8 | 55.2 | 54.6 | 54.0 | 53.4 | 52.8 | 52.2 | 51.6 | 51.0 | 50.4 |
| 7 | 66.5 | 65.8 | 65.1 | 64.4 | 63.7 | 63.0 | 62.3 | 61.6 | 60.9 | 60.2 | 59.5 | 58.8 |
| 8 | 76.0 | 75.2 | 74.4 | 73.6 | 72.8 | 72.0 | 71.2 | 70.4 | 69.6 | 68.8 | 68.0 | 67.2 |
| 9 | 85.5 | 84.6 | 83.7 | 82.8 | 81.9 | 81.0 | 80.1 | 79.2 | 78.3 | 77.4 | 76.5 | 75.6 |
| | 83 | 82 | 81 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 |
| 1 | 8.3 | 8.2 | 8.1 | 8.0 | 7.9 | 7.8 | 7.7 | 7.6 | 7.5 | 7.4 | 7.3 | 7.2 |
| 2 | 16.6 | 16.4 | 16.2 | 16.0 | 15.8 | 15.6 | 15.4 | 15.2 | 15.0 | 14.8 | 14.6 | 14.4 |
| 3 | 24.9 | 24.6 | 24.3 | 24.0 | 23.7 | 23.4 | 23.1 | 22.8 | 22.5 | 22.2 | 21.9 | 21.6 |
| 4 | 33.2 | 32.8 | 32.4 | 32.0 | 31.6 | 31.2 | 30.8 | 30.4 | 30.0 | 29.6 | 29.2 | 28.8 |
| 5 | 41.5 | 41.0 | 40.5 | 40.0 | 39.5 | 39.0 | 38.5 | 38.0 | 37.5 | 37.0 | 36.5 | 36.0 |
| 6 | 49.8 | 49.2 | 48.6 | 48.0 | 47.4 | 46.8 | 46.2 | 45.6 | 45.0 | 44.4 | 43.8 | 43.2 |
| 7 | 58.1 | 57.4 | 56.7 | 56.0 | 55.3 | 54.6 | 53.9 | 53.2 | 52.5 | 51.8 | 51.1 | 50.4 |
| 8 | 66.4 | 65.6 | 64.8 | 64.0 | 63.2 | 62.4 | 61.6 | 60.8 | 60.0 | 59.2 | 58.4 | 57.6 |
| 9 | 74.7 | 73.8 | 72.9 | 72.0 | 71.1 | 70.2 | 69.3 | 68.4 | 67.5 | 66.6 | 65.7 | 64.8 |

| | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" | 10" | | | |
|---|-----|-----|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 5 | 0 | 7.1 | 6270 | 6414 | 6558 | 6702 | 6845 | 6988 | 7130 | 7271 | 7413 | 7553 | 7694 | 50 |
| | 10 | | 7694 | 7834 | 7973 | 8112 | 8250 | 8389 | 8526 | 8663 | 8800 | 8937 | 9073 | 40 |
| | 20 | | 9073 | 9208 | 9343 | 9478 | 9612 | 9746 | 9879 | *0012 | *0145 | *0277 | *0409 | 30 |
| | 30 | 7.2 | 0409 | 0540 | 0671 | 0802 | 0932 | 1062 | 1191 | 1321 | 1449 | 1577 | 1705 | 20 |
| | 40 | | 1705 | 1833 | 1960 | 2087 | 2213 | 2339 | 2465 | 2590 | 2715 | 2840 | 2964 | 10 |
| | 50 | | 2964 | 3088 | 3212 | 3335 | 3458 | 3580 | 3703 | 3824 | 3946 | 4067 | 4188 | 0 54 |
| 6 | 0 | | 4188 | 4308 | 4428 | 4548 | 4668 | 4787 | 4906 | 5024 | 5142 | 5260 | 5378 | 50 |
| | 10 | | 5378 | 5495 | 5612 | 5728 | 5845 | 5961 | 6076 | 6192 | 6307 | 6421 | 6536 | 40 |
| | 20 | | 6536 | 6650 | 6764 | 6877 | 6991 | 7104 | 7216 | 7329 | 7441 | 7552 | 7664 | 30 |
| | 30 | | 7664 | 7775 | 7886 | 7997 | 8107 | 8217 | 8327 | 8437 | 8546 | 8655 | 8764 | 20 |
| | 40 | | 8764 | 8872 | 8980 | 9088 | 9196 | 9303 | 9410 | 9517 | 9624 | 9730 | 9836 | 10 |
| | 50 | | 9836 | 9942 | *0047 | *0153 | *0258 | *0362 | *0467 | *0571 | *0675 | *0779 | *0882 | 0 53 |
| 7 | 0 | 7.3 | 0882 | 0986 | 1089 | 1192 | 1294 | 1396 | 1499 | 1600 | 1702 | 1803 | 1904 | 50 |
| | 10 | | 1904 | 2005 | 2106 | 2206 | 2307 | 2406 | 2506 | 2606 | 2705 | 2804 | 2903 | 40 |
| | 20 | | 2903 | 3001 | 3100 | 3198 | 3296 | 3394 | 3491 | 3588 | 3685 | 3782 | 3879 | 30 |
| | 30 | | 3879 | 3975 | 4071 | 4167 | 4263 | 4359 | 4454 | 4549 | 4644 | 4739 | 4833 | 20 |
| | 40 | | 4833 | 4928 | 5022 | 5116 | 5209 | 5303 | 5396 | 5489 | 5582 | 5675 | 5767 | 10 |
| | 50 | | 5767 | 5860 | 5952 | 6044 | 6135 | 6227 | 6318 | 6409 | 6500 | 6591 | 6682 | 0 52 |
| 8 | 0 | | 6682 | 6772 | 6862 | 6952 | 7042 | 7132 | 7221 | 7310 | 7400 | 7488 | 7577 | 50 |
| | 10 | | 7577 | 7666 | 7754 | 7842 | 7930 | 8018 | 8106 | 8193 | 8281 | 8368 | 8455 | 40 |
| | 20 | | 8455 | 8541 | 8628 | 8714 | 8801 | 8887 | 8973 | 9058 | 9144 | 9229 | 9315 | 30 |
| | 30 | | 9315 | 9400 | 9485 | 9569 | 9654 | 9738 | 9823 | 9907 | 9991 | *0074 | *0158 | 20 |
| | 40 | 7.4 | 0158 | 0241 | 0325 | 0408 | 0491 | 0574 | 0656 | 0739 | 0821 | 0903 | 0985 | 10 |
| | 50 | | 0985 | 1067 | 1149 | 1230 | 1312 | 1393 | 1474 | 1555 | 1636 | 1716 | 1797 | 0 51 |
| 9 | 0 | | 1797 | 1877 | 1958 | 2038 | 2117 | 2197 | 2277 | 2356 | 2436 | 2515 | 2594 | 50 |
| | 10 | | 2594 | 2673 | 2751 | 2830 | 2909 | 2987 | 3065 | 3143 | 3221 | 3299 | 3376 | 40 |
| | 20 | | 3376 | 3454 | 3531 | 3608 | 3686 | 3762 | 3839 | 3916 | 3992 | 4069 | 4145 | 30 |
| | 30 | | 4145 | 4221 | 4297 | 4373 | 4449 | 4524 | 4600 | 4675 | 4750 | 4825 | 4900 | 20 |
| | 40 | | 4900 | 4975 | 5050 | 5124 | 5199 | 5273 | 5347 | 5421 | 5495 | 5569 | 5643 | 10 |
| | 50 | | 5643 | 5716 | 5790 | 5863 | 5936 | 6009 | 6082 | 6155 | 6228 | 6300 | 6373 | 0 50 |
| | 10" | 9" | 8" | 7" | 6" | 5" | 4" | 3" | 2" | 1" | 0" | | | |

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| 0.00 | ' " | 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | | P P |
|------|------|----------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 000 | 10 0 | 7.46 373 | 445 | 517 | 589 | 661 | 733 | 805 | 876 | 948 | *010 | *090 | 50 | 72 |
| 000 | 10 | 7.47 090 | 162 | 233 | 303 | 374 | 445 | 515 | 586 | 656 | 726 | 797 | 40 | 1 7.2 |
| 000 | 20 | 797 | 867 | 936 | *006 | *076 | *145 | *215 | *284 | *353 | *422 | *491 | 30 | 2 14.4 |
| 000 | 30 | 7.48 491 | 560 | 629 | 698 | 766 | 835 | 903 | 971 | *039 | *108 | *175 | 20 | 3 21.6 |
| 000 | 40 | 7.49 175 | 243 | 311 | 379 | 446 | 513 | 581 | 648 | 715 | 782 | 849 | 10 | 4 28.8 |
| 000 | 50 | 849 | 916 | 982 | *049 | *115 | *182 | *248 | *314 | *380 | *446 | *512 | 0 49 | 5 36.0 |
| 000 | 11 0 | 7.50 512 | 578 | 643 | 709 | 774 | 840 | 905 | 970 | *035 | *100 | *165 | 50 | 6 43.2 |
| 000 | 10 | 7.51 165 | 230 | 294 | 359 | 423 | 488 | 552 | 616 | 680 | 744 | 808 | 40 | 7 50.4 |
| 000 | 20 | 808 | 872 | 936 | 999 | *063 | *126 | *190 | *253 | *316 | *379 | *442 | 30 | 8 57.6 |
| 000 | 30 | 7.52 442 | 505 | 568 | 631 | 693 | 756 | 818 | 881 | 943 | *005 | *067 | 20 | 9 64.8 |
| 000 | 40 | 7.53 067 | 129 | 191 | 253 | 315 | 376 | 438 | 499 | 561 | 622 | 683 | 10 | 1 7.0 |
| 000 | 50 | 683 | 744 | 805 | 866 | 927 | 988 | *049 | *109 | *170 | *230 | *291 | 0 48 | 2 21.0 |
| 000 | 12 0 | 7.54 291 | 351 | 411 | 471 | 531 | 591 | 651 | 711 | 771 | 830 | 890 | 50 | 3 28.0 |
| 000 | 10 | 890 | 949 | *009 | *068 | *127 | *186 | *245 | *304 | *363 | *422 | *481 | 40 | 4 35.0 |
| 000 | 20 | 7.55 481 | 539 | 598 | 656 | 715 | 773 | 831 | 889 | 948 | *006 | *064 | 30 | 5 42.0 |
| 000 | 30 | 7.56 064 | 121 | 179 | 237 | 295 | 352 | 410 | 467 | 524 | 582 | 639 | 20 | 6 49.0 |
| 000 | 40 | 639 | 696 | 753 | 810 | 867 | 924 | 980 | *037 | *094 | *150 | *206 | 10 | 7 56.0 |
| 000 | 50 | 7.57 206 | 263 | 319 | 375 | 431 | 488 | 544 | 599 | 655 | 711 | 767 | 0 47 | 8 63.0 |
| 000 | 13 0 | 767 | 822 | 878 | 934 | 989 | *044 | *100 | *155 | *210 | *265 | *320 | 50 | 1 6.8 |
| 000 | 10 | 7.58 320 | 375 | 430 | 485 | 539 | 594 | 649 | 703 | 758 | 812 | 866 | 40 | 2 13.6 |
| 000 | 20 | 866 | 921 | 975 | *033 | *083 | *137 | *191 | *245 | *299 | *352 | *406 | 30 | 3 20.4 |
| 000 | 30 | 7.59 406 | 459 | 513 | 566 | 620 | 673 | 726 | 780 | 833 | 886 | 939 | 20 | 4 27.2 |
| 000 | 40 | 939 | 997 | *045 | *097 | *150 | *203 | *255 | *308 | *360 | *413 | *465 | 10 | 5 34.0 |
| 000 | 50 | 7.60 405 | 512 | 570 | 622 | 674 | 726 | 778 | 830 | 882 | 934 | 985 | 0 46 | 6 40.8 |
| 000 | 14 0 | 985 | *037 | *089 | *140 | *192 | *243 | *294 | *346 | *397 | *448 | *499 | 50 | 7 54.4 |
| 000 | 10 | 7.61 499 | 550 | 601 | 652 | 703 | 754 | 805 | 855 | 906 | 957 | *007 | 40 | 8 61.2 |
| 000 | 20 | 7.62 007 | 558 | 608 | 658 | 708 | 758 | 808 | 857 | 907 | 956 | *006 | 30 | 1 6.6 |
| 000 | 30 | 509 | 559 | 609 | 659 | 709 | 758 | 808 | 857 | 907 | 956 | *006 | 20 | 2 13.2 |
| 000 | 40 | 7.63 006 | 055 | 104 | 153 | 203 | 252 | 301 | 350 | 399 | 448 | 496 | 10 | 3 19.2 |
| 000 | 50 | 496 | 545 | 594 | 642 | 691 | 740 | 788 | 837 | 885 | 933 | 982 | 0 45 | 4 25.6 |
| 000 | 15 0 | 982 | *030 | *078 | *126 | *174 | *222 | *270 | *318 | *366 | *414 | *461 | 50 | 5 32.0 |
| 000 | 10 | 7.64 461 | 509 | 557 | 604 | 652 | 699 | 747 | 794 | 842 | 889 | 936 | 40 | 6 38.4 |
| 000 | 20 | 936 | 983 | *030 | *078 | *125 | *172 | *218 | *265 | *312 | *359 | *406 | 30 | 7 44.8 |
| 000 | 30 | 7.65 406 | 452 | 499 | 546 | 592 | 638 | 685 | 731 | 778 | 824 | 870 | 20 | 8 51.2 |
| 000 | 40 | 870 | 916 | 962 | *009 | *055 | *101 | *146 | *192 | *238 | *284 | *330 | 10 | 9 57.6 |
| 000 | 50 | 7.66 330 | 375 | 421 | 467 | 512 | 558 | 603 | 649 | 694 | 739 | 784 | 0 44 | 1 6.2 |
| 000 | 16 0 | 784 | 830 | 875 | 920 | 965 | *010 | *055 | *100 | *145 | *190 | *235 | 50 | 2 12.4 |
| 000 | 10 | 7.67 235 | 279 | 324 | 369 | 413 | 458 | 502 | 547 | 591 | 636 | 680 | 40 | 3 18.6 |
| *000 | 20 | 680 | 724 | 768 | 813 | 857 | 901 | 945 | 989 | *033 | *077 | *121 | 30 | 4 24.8 |
| *099 | 30 | 7.68 121 | 165 | 208 | 252 | 296 | 340 | 383 | 427 | 470 | 514 | 557 | 20 | 5 31.0 |
| 999 | 40 | 557 | 601 | 644 | 687 | 731 | 774 | 817 | 860 | 903 | 946 | 989 | 10 | 6 37.2 |
| 999 | 50 | 939 | *032 | *075 | *118 | *161 | *204 | *247 | *289 | *332 | *375 | *417 | 0 43 | 7 43.4 |
| 999 | 17 0 | 7.69 417 | 460 | 502 | 545 | 587 | 630 | 672 | 714 | 757 | 799 | 841 | 50 | 8 49.6 |
| 999 | 10 | 841 | 883 | 925 | 967 | *009 | *051 | *093 | *135 | *177 | *219 | *261 | 40 | 9 55.8 |
| 999 | 20 | 7.70 261 | 302 | 344 | 386 | 427 | 469 | 510 | 552 | 593 | 635 | 676 | 30 | 1 6.1 |
| 999 | 30 | 676 | 718 | 759 | 800 | 841 | 883 | 924 | 965 | *006 | *047 | *088 | 20 | 2 12.2 |
| 999 | 40 | 7.71 088 | 129 | 170 | 211 | 251 | 292 | 333 | 374 | 414 | 455 | 496 | 10 | 3 18.3 |
| 999 | 50 | 496 | 536 | 577 | 617 | 658 | 698 | 739 | 779 | 819 | 859 | 900 | 0 42 | 4 24.4 |
| 999 | 18 0 | 900 | 940 | 980 | *020 | *060 | *100 | *140 | *180 | *220 | *260 | *300 | 50 | 5 30.5 |
| 999 | 10 | 7.72 300 | 340 | 380 | 419 | 459 | 499 | 538 | 578 | 618 | 657 | 697 | 40 | 6 36.6 |
| 999 | 20 | 607 | 736 | 775 | 815 | 854 | 894 | 933 | 972 | *011 | *050 | *090 | 30 | 7 42.7 |
| 999 | 30 | 7.73 090 | 129 | 168 | 207 | 246 | 285 | 324 | 363 | 401 | 440 | 479 | 20 | 8 48.8 |
| 999 | 40 | 479 | 518 | 557 | 595 | 634 | 673 | 711 | 750 | 788 | 827 | 865 | 10 | 9 54.9 |
| 999 | 50 | 805 | 904 | 942 | 980 | *019 | *057 | *095 | *133 | *171 | *210 | *248 | 0 41 | 1 6.0 |
| 999 | 19 0 | 7.74 248 | 286 | 324 | 362 | 400 | 438 | 476 | 514 | 551 | 589 | 627 | 50 | 2 12.0 |
| 999 | 10 | 627 | 665 | 703 | 740 | 778 | 815 | 853 | 891 | 928 | 966 | *003 | 40 | 3 18.0 |
| 999 | 20 | 7.75 003 | 040 | 078 | 115 | 153 | 190 | 227 | 264 | 302 | 339 | 376 | 30 | 4 24.0 |
| 999 | 30 | 376 | 413 | 450 | 487 | 524 | 561 | 598 | 635 | 672 | 709 | 745 | 20 | 5 30.0 |
| 999 | 40 | 745 | 782 | 819 | 856 | 892 | 929 | 966 | *002 | *039 | *075 | *112 | 10 | 6 36.0 |
| 999 | 50 | 7.76 112 | 148 | 185 | 221 | 258 | 294 | 330 | 367 | 403 | 439 | 475 | 0 40 | 7 42.0 |
| 9.99 | | 10° | 9° | 8° | 7° | 6° | 5° | 4° | 3° | 2° | 1° | 0° | ' " | P P |

| 9.99 | " | 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | |
|------|------|----------|------|------|------|------|------|------|------|------|------|------|------|
| 999 | 20 0 | 7.76 475 | 512 | 548 | 584 | 620 | 656 | 692 | 728 | 764 | 800 | 836 | 50 |
| 999 | 10 | 830 | 572 | 907 | 943 | 979 | *015 | *051 | *086 | *122 | *158 | *193 | 40 |
| 999 | 20 | 7.77 103 | 220 | 264 | 300 | 335 | 371 | 406 | 442 | 477 | 512 | 548 | 30 |
| 999 | 30 | 548 | 583 | 618 | 654 | 689 | 724 | 759 | 794 | 829 | 864 | 899 | 20 |
| 999 | 40 | 899 | 934 | 969 | *004 | *039 | *074 | *109 | *144 | *179 | *213 | *248 | 10 |
| 999 | 50 | 7.78 248 | 283 | 318 | 352 | 387 | 422 | 456 | 491 | 525 | 560 | 594 | 0 39 |
| 999 | 21 0 | 594 | 629 | 663 | 698 | 732 | 766 | 801 | 835 | 869 | 903 | 938 | 50 |
| 999 | 10 | 938 | 972 | *006 | *040 | *074 | *108 | *142 | *176 | *210 | *244 | *278 | 40 |
| 999 | 20 | 7.79 278 | 312 | 346 | 380 | 414 | 448 | 481 | 515 | 549 | 582 | 616 | 30 |
| 999 | 30 | 616 | 650 | 683 | 717 | 751 | 784 | 818 | 851 | 885 | 918 | 952 | 20 |
| 999 | 40 | 952 | *018 | *052 | *085 | *118 | *152 | *185 | *218 | *251 | *284 | *317 | 10 |
| 999 | 50 | 7.80 284 | 317 | 351 | 384 | 417 | 450 | 483 | 516 | 549 | 582 | 615 | 0 38 |
| 999 | 22 0 | 615 | 647 | 680 | 713 | 746 | 779 | 812 | 844 | 877 | 910 | 942 | 50 |
| 999 | 10 | 942 | 975 | *008 | *040 | *073 | *105 | *138 | *170 | *203 | *235 | *268 | 40 |
| 999 | 20 | 7.81 268 | 300 | 332 | 365 | 397 | 429 | 462 | 494 | 526 | 558 | 591 | 30 |
| 999 | 30 | 591 | 623 | 655 | 687 | 719 | 751 | 783 | 815 | 847 | 879 | 911 | 20 |
| 999 | 40 | 911 | 943 | 975 | *007 | *039 | *070 | *102 | *134 | *166 | *198 | *229 | 10 |
| 999 | 50 | 7.82 229 | 261 | 293 | 324 | 356 | 387 | 419 | 451 | 482 | 514 | 545 | 0 37 |
| 999 | 23 0 | 545 | 577 | 608 | 639 | 671 | 702 | 733 | 765 | 796 | 827 | 859 | 50 |
| 999 | 10 | 859 | 890 | 921 | 952 | 983 | *015 | *046 | *077 | *108 | *139 | *170 | 40 |
| 999 | 20 | 7.83 170 | 201 | 232 | 263 | 294 | 325 | 356 | 387 | 417 | 448 | 479 | 30 |
| 999 | 30 | 479 | 510 | 541 | 571 | 602 | 633 | 663 | 694 | 725 | 755 | 786 | 20 |
| 999 | 40 | 756 | 817 | 847 | 878 | 908 | 939 | 969 | *000 | *030 | *060 | *091 | 10 |
| 999 | 50 | 7.84 091 | 121 | 151 | 182 | 212 | 242 | 273 | 303 | 333 | 363 | 393 | 0 36 |
| 999 | 24 0 | 393 | 424 | 454 | 484 | 514 | 544 | 574 | 604 | 634 | 664 | 694 | 50 |
| 999 | 10 | 694 | 724 | 754 | 784 | 814 | 843 | 873 | 903 | 933 | 963 | 992 | 40 |
| 999 | 20 | 992 | *022 | *052 | *082 | *111 | *141 | *171 | *200 | *230 | *259 | *289 | 30 |
| 999 | 30 | 7.85 289 | 318 | 348 | 377 | 407 | 436 | 466 | 495 | 525 | 554 | 583 | 20 |
| 999 | 40 | 583 | 613 | 642 | 671 | 701 | 730 | 759 | 788 | 817 | 847 | 876 | 10 |
| 999 | 50 | 876 | 905 | 934 | 963 | 992 | *021 | *050 | *079 | *108 | *137 | *166 | 0 35 |
| 999 | 25 0 | 7.86 166 | 195 | 224 | 253 | 282 | 311 | 340 | 368 | 397 | 426 | 455 | 50 |
| 999 | 10 | 455 | 484 | 512 | 541 | 570 | 598 | 627 | 656 | 684 | 713 | 741 | 40 |
| 999 | 20 | 741 | 770 | 799 | 827 | 856 | 884 | 913 | 941 | 969 | 998 | *026 | 30 |
| 999 | 30 | 7.87 026 | 055 | 083 | 111 | 140 | 168 | 196 | 224 | 253 | 281 | 309 | 20 |
| 999 | 40 | 309 | 337 | 366 | 394 | 422 | 450 | 478 | 506 | 534 | 562 | 590 | 10 |
| 999 | 50 | 590 | 618 | 646 | 674 | 702 | 730 | 758 | 786 | 814 | 842 | 870 | 0 34 |
| 999 | 26 0 | 870 | 897 | 925 | 953 | 981 | *009 | *036 | *064 | *092 | *119 | *147 | 50 |
| 999 | 10 | 7.88 147 | 175 | 202 | 230 | 258 | 285 | 313 | 340 | 368 | 395 | 423 | 40 |
| 999 | 20 | 423 | 450 | 478 | 505 | 533 | 560 | 587 | 615 | 642 | 669 | 697 | 30 |
| 999 | 30 | 697 | 724 | 751 | 779 | 806 | 833 | 860 | 888 | 915 | 942 | 969 | 20 |
| 999 | 40 | 969 | 996 | *023 | *050 | *077 | *105 | *132 | *159 | *186 | *213 | *240 | 10 |
| 999 | 50 | 7.89 240 | 267 | 294 | 320 | 347 | 374 | 401 | 428 | 455 | 482 | 509 | 0 33 |
| 999 | 27 0 | 509 | 535 | 562 | 589 | 616 | 642 | 669 | 696 | 722 | 749 | 776 | 50 |
| 999 | 10 | 776 | 802 | 829 | 856 | 882 | 909 | 935 | 962 | 988 | *015 | *041 | 40 |
| 999 | 20 | 7.90 041 | 068 | 094 | 121 | 147 | 174 | 200 | 226 | 253 | 279 | 305 | 30 |
| 999 | 30 | 305 | 332 | 358 | 384 | 411 | 437 | 463 | 489 | 515 | 542 | 568 | 20 |
| 999 | 40 | 568 | 594 | 620 | 646 | 672 | 698 | 725 | 751 | 777 | 803 | 829 | 10 |
| 999 | 50 | 829 | 855 | 881 | 907 | 933 | 958 | 984 | *010 | *036 | *062 | *088 | 0 32 |
| 999 | 28 0 | 7.91 088 | 114 | 140 | 165 | 191 | 217 | 243 | 269 | 294 | 320 | 346 | 50 |
| 999 | 10 | 346 | 371 | 397 | 423 | 448 | 474 | 500 | 525 | 551 | 576 | 602 | 40 |
| 999 | 20 | 602 | 627 | 653 | 678 | 704 | 729 | 755 | 780 | 806 | 831 | 857 | 30 |
| 999 | 30 | 857 | 882 | 907 | 933 | 958 | 983 | *009 | *034 | *059 | *085 | *110 | 20 |
| 999 | 40 | 7.92 110 | 135 | 160 | 186 | 211 | 236 | 261 | 286 | 311 | 336 | 362 | 10 |
| 999 | 50 | 362 | 387 | 412 | 437 | 462 | 487 | 512 | 537 | 562 | 587 | 612 | 0 31 |
| 998 | 29 0 | 612 | 637 | 662 | 687 | 712 | 737 | 761 | 786 | 811 | 836 | 861 | 50 |
| 998 | 10 | 861 | 886 | 910 | 935 | 960 | 985 | *009 | *034 | *059 | *084 | *108 | 40 |
| 998 | 20 | 7.93 108 | 133 | 158 | 182 | 207 | 231 | 256 | 281 | 305 | 330 | 354 | 30 |
| 998 | 30 | 354 | 379 | 403 | 428 | 452 | 477 | 501 | 526 | 550 | 575 | 599 | 20 |
| 998 | 40 | 599 | 623 | 648 | 672 | 696 | 721 | 745 | 769 | 794 | 818 | 842 | 10 |
| 998 | 50 | 842 | 866 | 891 | 915 | 939 | 963 | 988 | *012 | *036 | *060 | *084 | 0 30 |
| 9.99 | | 10° | 9° | 8° | 7° | 6° | 5° | 4° | 3° | 2° | 1° | 0° | " |

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*90° 180° *270°

| | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" | 10" | | P | P |
|------|----------|------|------|------|------|------|------|------|------|------|------|------|---|-----------|
| 20 o | 7.76 476 | 512 | 548 | 585 | 621 | 657 | 693 | 729 | 765 | 801 | 837 | 50 | | 37 36 |
| 10 | 837 | 872 | 908 | 944 | 980 | *016 | *051 | *087 | *123 | *158 | *194 | 40 | 1 | 3.7 3.6 |
| 20 | 7.77 194 | 230 | 265 | 301 | 336 | 372 | 407 | 442 | 478 | 513 | 549 | 30 | 2 | 7.4 7.2 |
| 30 | 549 | 584 | 619 | 654 | 690 | 725 | 760 | 795 | 830 | 865 | 900 | 20 | 3 | 11.1 10.8 |
| 40 | 900 | 935 | 970 | *005 | *040 | *075 | *110 | *145 | *179 | *214 | *249 | 10 | 4 | 14.8 14.4 |
| 50 | 7.78 249 | 284 | 318 | 353 | 388 | 422 | 457 | 492 | 526 | 561 | 595 | 0 39 | 5 | 18.5 18.0 |
| | | | | | | | | | | | | | 6 | 22.2 21.6 |
| 21 o | 595 | 630 | 664 | 698 | 733 | 767 | 801 | 836 | 870 | 904 | 938 | 50 | 7 | 25.9 25.2 |
| 10 | 938 | 973 | *007 | *041 | *075 | *109 | *143 | *177 | *211 | *245 | *279 | 40 | 8 | 29.6 28.8 |
| 20 | 7.79 279 | 313 | 347 | 381 | 415 | 448 | 482 | 516 | 550 | 583 | 617 | 30 | 9 | 33.3 32.4 |
| 30 | 617 | 651 | 684 | 718 | 751 | 785 | 819 | 852 | 886 | 919 | 952 | 20 | | 35 34 |
| 40 | 952 | 986 | *019 | *053 | *086 | *119 | *152 | *186 | *219 | *252 | *285 | 10 | 1 | 3.5 3.4 |
| 50 | 7.80 285 | 318 | 351 | 385 | 418 | 451 | 484 | 517 | 550 | 583 | 615 | 0 38 | 2 | 6.8 6.8 |
| | | | | | | | | | | | | | 3 | 10.5 10.2 |
| 22 o | 615 | 648 | 681 | 714 | 747 | 780 | 812 | 845 | 878 | 911 | 943 | 50 | 4 | 14.0 13.6 |
| 10 | 943 | 976 | *009 | *041 | *074 | *106 | *139 | *171 | *204 | *236 | *269 | 40 | 5 | 17.5 17.0 |
| 20 | 7.81 269 | 301 | 333 | 366 | 398 | 430 | 463 | 495 | 527 | 559 | 591 | 30 | 6 | 21.0 20.4 |
| 30 | 591 | 624 | 656 | 688 | 720 | 752 | 784 | 816 | 848 | 880 | 912 | 20 | 7 | 24.5 23.8 |
| 40 | 912 | 944 | 976 | *008 | *040 | *071 | *103 | *135 | *167 | *198 | *230 | 10 | 8 | 28.0 27.2 |
| 50 | 7.82 230 | 262 | 294 | 325 | 357 | 388 | 420 | 452 | 483 | 515 | 546 | 0 37 | 9 | 31.5 30.6 |
| | | | | | | | | | | | | | | 33 32 |
| 23 o | 546 | 578 | 609 | 640 | 672 | 703 | 734 | 766 | 797 | 828 | 860 | 50 | 1 | 3.3 3.2 |
| 10 | 860 | 891 | 922 | 953 | 984 | *016 | *047 | *078 | *109 | *140 | *171 | 40 | 2 | 6.6 6.4 |
| 20 | 7.83 171 | 202 | 233 | 264 | 295 | 326 | 357 | 388 | 418 | 449 | 480 | 30 | 3 | 9.9 9.6 |
| 30 | 480 | 511 | 542 | 572 | 603 | 634 | 664 | 695 | 726 | 756 | 787 | 20 | 4 | 13.2 12.8 |
| 40 | 787 | 818 | 848 | 879 | 909 | 940 | 970 | *001 | *031 | *061 | *092 | 10 | 5 | 16.5 16.0 |
| 50 | 7.84 092 | 122 | 152 | 183 | 213 | 243 | 274 | 304 | 334 | 364 | 394 | 0 36 | 6 | 19.8 19.2 |
| | | | | | | | | | | | | | 7 | 23.1 22.4 |
| 24 o | 394 | 425 | 455 | 485 | 515 | 545 | 575 | 605 | 635 | 665 | 695 | 50 | 8 | 26.4 25.6 |
| 10 | 695 | 725 | 755 | 785 | 815 | 845 | 874 | 904 | 934 | 964 | 993 | 40 | 9 | 29.7 28.8 |
| 20 | 993 | *023 | *053 | *083 | *112 | *142 | *172 | *201 | *231 | *260 | *290 | 30 | | 31 30 |
| 30 | 7.85 290 | 319 | 349 | 378 | 408 | 437 | 467 | 496 | 526 | 555 | 584 | 20 | 1 | 3.1 3.0 |
| 40 | 584 | 614 | 643 | 672 | 702 | 731 | 760 | 789 | 819 | 848 | 877 | 10 | 2 | 6.2 6.0 |
| 50 | 877 | 906 | 935 | 964 | 993 | *022 | *051 | *080 | *109 | *138 | *167 | 0 35 | 3 | 9.3 9.0 |
| | | | | | | | | | | | | | 4 | 12.4 12.0 |
| 25 o | 7.86 167 | 196 | 225 | 254 | 283 | 312 | 341 | 370 | 398 | 427 | 456 | 50 | 5 | 15.5 15.0 |
| 10 | 456 | 485 | 513 | 542 | 571 | 600 | 628 | 657 | 685 | 714 | 743 | 40 | 6 | 18.6 18.0 |
| 20 | 743 | 771 | 800 | 828 | 857 | 885 | 914 | 942 | 971 | 999 | *027 | 30 | 7 | 21.7 21.0 |
| 30 | 7.87 027 | 056 | 084 | 113 | 141 | 169 | 197 | 226 | 254 | 282 | 310 | 20 | 8 | 24.8 24.0 |
| 40 | 310 | 339 | 367 | 395 | 423 | 451 | 479 | 507 | 535 | 563 | 591 | 10 | 9 | 27.9 27.0 |
| 50 | 591 | 619 | 647 | 675 | 703 | 731 | 759 | 787 | 815 | 843 | 871 | 0 34 | | 29 28 |
| | | | | | | | | | | | | | 1 | 2.9 2.8 |
| 26 o | 871 | 899 | 926 | 954 | 982 | *010 | *037 | *065 | *093 | *121 | *148 | 50 | 2 | 5.8 5.6 |
| 10 | 7.88 148 | 176 | 204 | 231 | 259 | 286 | 314 | 342 | 369 | 397 | 424 | 40 | 3 | 8.7 8.4 |
| 20 | 424 | 452 | 479 | 506 | 534 | 561 | 589 | 616 | 643 | 671 | 698 | 30 | 4 | 11.6 11.2 |
| 30 | 698 | 725 | 753 | 780 | 807 | 834 | 862 | 889 | 916 | 943 | 970 | 20 | 5 | 14.5 14.0 |
| 40 | 970 | 997 | *025 | *052 | *079 | *106 | *133 | *160 | *187 | *214 | *241 | 10 | 6 | 17.4 16.8 |
| 50 | 7.89 241 | 268 | 295 | 322 | 349 | 376 | 403 | 429 | 456 | 483 | 510 | 0 33 | 7 | 20.3 19.6 |
| | | | | | | | | | | | | | 8 | 23.2 22.4 |
| 27 o | 510 | 537 | 563 | 590 | 617 | 644 | 670 | 697 | 724 | 750 | 777 | 50 | 9 | 26.1 25.2 |
| 10 | 777 | 804 | 830 | 857 | 884 | 910 | 937 | 963 | 990 | *016 | *043 | 40 | | 27 26 |
| 20 | 7.90 043 | 069 | 096 | 122 | 149 | 175 | 201 | 228 | 254 | 280 | 307 | 30 | 1 | 2.7 2.6 |
| 30 | 307 | 333 | 359 | 386 | 412 | 438 | 464 | 491 | 517 | 543 | 569 | 20 | 2 | 5.4 5.2 |
| 40 | 509 | 595 | 622 | 648 | 674 | 700 | 726 | 752 | 778 | 804 | 830 | 10 | 3 | 8.1 7.8 |
| 50 | 830 | 856 | 882 | 908 | 934 | 960 | 986 | *012 | *038 | *064 | *089 | 0 32 | 4 | 10.8 10.4 |
| | | | | | | | | | | | | | 5 | 13.5 13.0 |
| 28 o | 7.91 089 | 115 | 141 | 167 | 193 | 218 | 244 | 270 | 296 | 321 | 347 | 50 | 6 | 16.2 15.6 |
| 10 | 347 | 373 | 398 | 424 | 450 | 475 | 501 | 527 | 552 | 578 | 603 | 40 | 7 | 18.9 18.2 |
| 20 | 603 | 629 | 654 | 680 | 705 | 731 | 756 | 782 | 807 | 833 | 858 | 30 | 8 | 21.6 20.8 |
| 30 | 858 | 883 | 909 | 934 | 960 | 985 | *010 | *036 | *061 | *086 | *111 | 20 | 9 | 24.3 23.4 |
| 40 | 7.92 111 | 137 | 162 | 187 | 212 | 237 | 263 | 288 | 313 | 338 | 363 | 10 | | 25 24 |
| 50 | 363 | 388 | 413 | 438 | 463 | 488 | 513 | 538 | 563 | 588 | 613 | 0 31 | 1 | 2.5 2.4 |
| | | | | | | | | | | | | | 2 | 5.0 4.8 |
| 29 o | 613 | 638 | 663 | 688 | 713 | 738 | 763 | 788 | 813 | 838 | 862 | 50 | 3 | 7.5 7.2 |
| 10 | 862 | 887 | 912 | 937 | 961 | 986 | *011 | *036 | *060 | *085 | *110 | 40 | 4 | 10.0 9.6 |
| 20 | 7.93 110 | 134 | 159 | 184 | 208 | 233 | 258 | 282 | 307 | 331 | 356 | 30 | 5 | 12.5 12.0 |
| 30 | 356 | 380 | 405 | 429 | 454 | 478 | 503 | 527 | 552 | 576 | 601 | 20 | 6 | 15.0 14.4 |
| 40 | 601 | 625 | 649 | 674 | 698 | 722 | 747 | 771 | 795 | 820 | 844 | 10 | 7 | 17.5 16.8 |
| 50 | 844 | 868 | 892 | 917 | 941 | 965 | 989 | *013 | *038 | *062 | *086 | 0 30 | 8 | 20.0 19.2 |
| | | | | | | | | | | | | | 9 | 22.5 21.6 |
| | 10" | 9" | 8" | 7" | 6" | 5" | 4" | 3" | 2" | 1" | 0" | | P | P |

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| | | 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | |
|-------|------|----------|------|------|------|------|------|------|------|------|------|------|------|
| 998 | 30 0 | 7.94 084 | 108 | 132 | 157 | 181 | 205 | 229 | 253 | 277 | 301 | 325 | 50 |
| 998 | 10 | 325 | 349 | 373 | 397 | 421 | 445 | 469 | 492 | 516 | 540 | 564 | 40 |
| 998 | 20 | 564 | 588 | 612 | 636 | 659 | 683 | 707 | 731 | 755 | 778 | 802 | 30 |
| 998 | 30 | 802 | 826 | 849 | 873 | 897 | 921 | 944 | 968 | 991 | *015 | *039 | 20 |
| 998 | 40 | 7.95 039 | 062 | 086 | 109 | 133 | 157 | 180 | 204 | 227 | 251 | 274 | 10 |
| 998 | 50 | 274 | 298 | 321 | 344 | 368 | 391 | 415 | 438 | 461 | 485 | 508 | 0 29 |
| 998 | 31 0 | 508 | 532 | 555 | 578 | 601 | 625 | 648 | 671 | 695 | 718 | 741 | 50 |
| 998 | 10 | 741 | 764 | 787 | 811 | 834 | 857 | 880 | 903 | 926 | 950 | 973 | 40 |
| 998 | 20 | 973 | 996 | *019 | *042 | *065 | *088 | *111 | *134 | *157 | *180 | *203 | 30 |
| 998 | 30 | 7.96 203 | 226 | 249 | 272 | 295 | 318 | 341 | 364 | 386 | 409 | 432 | 20 |
| 998 | 40 | 432 | 455 | 478 | 501 | 524 | 546 | 569 | 592 | 615 | 637 | 660 | 10 |
| 998 | 50 | 660 | 683 | 706 | 728 | 751 | 774 | 796 | 819 | 842 | 864 | 887 | 0 28 |
| 998 | 32 0 | 887 | 910 | 932 | 955 | 977 | *000 | *022 | *045 | *068 | *090 | *113 | 50 |
| 998 | 10 | 7.97 113 | 135 | 158 | 180 | 202 | 225 | 247 | 270 | 292 | 315 | 337 | 40 |
| 998 | 20 | 337 | 359 | 382 | 404 | 426 | 449 | 471 | 493 | 516 | 538 | 560 | 30 |
| 998 | 30 | 560 | 583 | 605 | 627 | 649 | 672 | 694 | 716 | 738 | 760 | 782 | 20 |
| 998 | 40 | 782 | 805 | 827 | 849 | 871 | 893 | 915 | 937 | 959 | 981 | *003 | 10 |
| 998 | 50 | 7.98 003 | 025 | 048 | 070 | 092 | 114 | 136 | 157 | 179 | 201 | 223 | 0 27 |
| 998 | 33 0 | 223 | 245 | 267 | 289 | 311 | 333 | 355 | 377 | 398 | 420 | 442 | 50 |
| 998 | 10 | 442 | 464 | 486 | 508 | 529 | 551 | 573 | 595 | 616 | 638 | 660 | 40 |
| 998 | 20 | 660 | 682 | 703 | 725 | 747 | 768 | 790 | 812 | 833 | 855 | 876 | 30 |
| 998 | 30 | 876 | 898 | 920 | 941 | 963 | 984 | *006 | *027 | *049 | *070 | *092 | 20 |
| 998 | 40 | 7.99 092 | 113 | 135 | 156 | 178 | 199 | 221 | 242 | 264 | 285 | 306 | 10 |
| 998 | 50 | 306 | 328 | 349 | 371 | 392 | 413 | 435 | 456 | 477 | 499 | 520 | 0 26 |
| 998 | 34 0 | 520 | 541 | 562 | 584 | 605 | 626 | 647 | 669 | 690 | 711 | 732 | 50 |
| 998 | 10 | 732 | 753 | 775 | 796 | 817 | 838 | 859 | 880 | 901 | 922 | 943 | 40 |
| 998 | 20 | 943 | 965 | 986 | *007 | *028 | *049 | *070 | *091 | *112 | *133 | *154 | 30 |
| 998 | 30 | 8.00 154 | 175 | 196 | 217 | 238 | 259 | 279 | 300 | 321 | 342 | 363 | 20 |
| 998 | 40 | 363 | 384 | 405 | 426 | 447 | 468 | 488 | 509 | 530 | 551 | 571 | 10 |
| 998 | 50 | 571 | 592 | 613 | 634 | 654 | 675 | 696 | 717 | 737 | 758 | 779 | 0 25 |
| 998 | 35 0 | 779 | 799 | 820 | 841 | 861 | 882 | 903 | 923 | 944 | 964 | 985 | 50 |
| 998 | 10 | 985 | *006 | *026 | *047 | *067 | *088 | *108 | *129 | *149 | *170 | *190 | 40 |
| 998 | 20 | 8.01 190 | 211 | 231 | 252 | 272 | 293 | 313 | 333 | 354 | 374 | 395 | 30 |
| 998 | 30 | 395 | 415 | 435 | 456 | 476 | 496 | 517 | 537 | 557 | 578 | 598 | 20 |
| 998 | 40 | 598 | 618 | 639 | 659 | 679 | 699 | 720 | 740 | 760 | 780 | 801 | 10 |
| 998 | 50 | 801 | 821 | 841 | 861 | 881 | 901 | 922 | 942 | 962 | 982 | *002 | 0 24 |
| 998 | 36 0 | 8.02 002 | 022 | 042 | 062 | 082 | 102 | 123 | 143 | 163 | 183 | 203 | 50 |
| 998 | 10 | 203 | 223 | 243 | 263 | 283 | 303 | 323 | 343 | 362 | 382 | 402 | 40 |
| 998 | 20 | 402 | 422 | 442 | 462 | 482 | 502 | 522 | 542 | 561 | 581 | 601 | 30 |
| 998 | 30 | 601 | 621 | 641 | 661 | 680 | 700 | 720 | 740 | 759 | 779 | 799 | 20 |
| 998 | 40 | 799 | 819 | 838 | 858 | 878 | 898 | 917 | 937 | 957 | 976 | 996 | 10 |
| 998 | 50 | 996 | *016 | *035 | *055 | *074 | *094 | *114 | *133 | *153 | *172 | *192 | 0 23 |
| 997 | 37 0 | 8.03 192 | 212 | 231 | 251 | 270 | 290 | 309 | 329 | 348 | 368 | 387 | 50 |
| 997 | 10 | 387 | 407 | 426 | 446 | 465 | 484 | 504 | 523 | 543 | 562 | 581 | 40 |
| 997 | 20 | 581 | 601 | 620 | 640 | 659 | 678 | 698 | 717 | 736 | 756 | 775 | 30 |
| 997 | 30 | 775 | 794 | 813 | 833 | 852 | 871 | 891 | 910 | 929 | 948 | 967 | 20 |
| 997 | 40 | 967 | 987 | *006 | *025 | *044 | *063 | *083 | *102 | *121 | *140 | *159 | 10 |
| 997 | 50 | 8.04 159 | 178 | 197 | 217 | 236 | 255 | 274 | 293 | 312 | 331 | 350 | 0 22 |
| 997 | 38 0 | 350 | 369 | 388 | 407 | 426 | 445 | 464 | 483 | 502 | 521 | 540 | 50 |
| 997 | 10 | 540 | 559 | 578 | 597 | 616 | 635 | 654 | 673 | 692 | 710 | 729 | 40 |
| 997 | 20 | 729 | 748 | 767 | 786 | 805 | 824 | 843 | 861 | 880 | 899 | 918 | 30 |
| 997 | 30 | 918 | 937 | 955 | 974 | 993 | *012 | *030 | *049 | *068 | *087 | *105 | 20 |
| 997 | 40 | 8.05 105 | 124 | 143 | 161 | 180 | 199 | 218 | 236 | 255 | 274 | 292 | 10 |
| 997 | 50 | 292 | 311 | 329 | 348 | 367 | 385 | 404 | 422 | 441 | 460 | 478 | 0 21 |
| 997 | 39 0 | 478 | 497 | 515 | 534 | 552 | 571 | 589 | 608 | 626 | 645 | 663 | 50 |
| 997 | 10 | 663 | 682 | 700 | 719 | 737 | 756 | 774 | 792 | 811 | 829 | 848 | 40 |
| 997 | 20 | 848 | 866 | 885 | 903 | 921 | 940 | 958 | 976 | 995 | *013 | *031 | 30 |
| 997 | 30 | 8.06 031 | 050 | 068 | 086 | 105 | 123 | 141 | 159 | 178 | 196 | 214 | 20 |
| 997 | 40 | 214 | 232 | 251 | 269 | 287 | 305 | 324 | 342 | 360 | 378 | 396 | 10 |
| 997 | 50 | 396 | 414 | 433 | 451 | 469 | 487 | 505 | 523 | 541 | 560 | 578 | 0 20 |
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|------|----------|------|------|------|------|------|------|------|------|------|------|------|---|-----------|
| 30 o | 7.94 086 | 110 | 134 | 158 | 182 | 206 | 230 | 254 | 278 | 302 | 326 | 50 | | 25 |
| 10 | 326 | 350 | 374 | 398 | 422 | 446 | 470 | 494 | 518 | 542 | 566 | 40 | 1 | 2.5 |
| 20 | 566 | 590 | 613 | 637 | 661 | 685 | 709 | 732 | 756 | 780 | 804 | 30 | 2 | 5.0 |
| 30 | 804 | 827 | 851 | 875 | 899 | 922 | 946 | 970 | 993 | *017 | *040 | 20 | 3 | 7.5 |
| 40 | 7.95 040 | 064 | 088 | 111 | 135 | 158 | 182 | 205 | 229 | 252 | 276 | 10 | 4 | 10.0 |
| 50 | 276 | 299 | 323 | 346 | 370 | 393 | 416 | 440 | 463 | 487 | 510 | 0 29 | 5 | 12.5 |
| 31 o | 510 | 533 | 557 | 580 | 603 | 627 | 650 | 673 | 696 | 720 | 743 | 50 | 6 | 15.0 |
| 10 | 743 | 766 | 789 | 812 | 836 | 859 | 882 | 905 | 928 | 951 | 974 | 40 | 7 | 17.5 |
| 20 | 974 | 998 | *021 | *044 | *067 | *090 | *113 | *136 | *159 | *182 | *205 | 30 | 8 | 20.0 |
| 30 | 7.96 205 | 228 | 251 | 274 | 297 | 320 | 343 | 365 | 388 | 411 | 434 | 20 | 9 | 22.5 |
| 40 | 434 | 457 | 480 | 503 | 525 | 548 | 571 | 594 | 617 | 639 | 662 | 10 | | 24 23 |
| 50 | 662 | 685 | 708 | 730 | 753 | 776 | 798 | 821 | 844 | 866 | 889 | 0 28 | 1 | 2.4 2.3 |
| 32 o | 889 | 911 | 934 | 957 | 979 | *002 | *024 | *047 | *069 | *092 | *114 | 50 | 2 | 4.8 4.6 |
| 10 | 7.97 114 | 137 | 159 | 182 | 204 | 227 | 249 | 272 | 294 | 317 | 339 | 40 | 3 | 7.2 6.9 |
| 20 | 339 | 361 | 384 | 406 | 428 | 451 | 473 | 495 | 518 | 540 | 562 | 30 | 4 | 9.6 9.2 |
| 30 | 562 | 585 | 607 | 629 | 651 | 673 | 696 | 718 | 740 | 762 | 784 | 20 | 5 | 12.0 11.5 |
| 40 | 784 | 807 | 829 | 851 | 873 | 895 | 917 | 939 | 961 | 983 | *005 | 10 | 6 | 14.4 13.8 |
| 50 | 7.98 005 | 027 | 050 | 072 | 094 | 116 | 138 | 159 | 181 | 203 | 225 | 0 27 | 7 | 16.8 16.1 |
| 33 o | 225 | 247 | 269 | 291 | 313 | 335 | 357 | 379 | 400 | 422 | 444 | 50 | 8 | 19.2 18.4 |
| 10 | 444 | 466 | 488 | 510 | 531 | 553 | 575 | 597 | 618 | 640 | 662 | 40 | 9 | 21.6 20.7 |
| 20 | 662 | 684 | 705 | 727 | 749 | 770 | 792 | 814 | 835 | 857 | 878 | 30 | | 22 |
| 30 | 878 | 900 | 922 | 943 | 965 | 986 | *008 | *029 | *051 | *073 | *094 | 20 | 1 | 2.2 |
| 40 | 7.99 094 | 116 | 137 | 158 | 180 | 201 | 223 | 244 | 266 | 287 | 308 | 10 | 2 | 4.4 |
| 50 | 308 | 330 | 351 | 373 | 394 | 415 | 437 | 458 | 479 | 501 | 522 | 0 26 | 3 | 6.6 |
| 34 o | 522 | 543 | 564 | 586 | 607 | 628 | 649 | 671 | 692 | 713 | 734 | 50 | 4 | 8.8 |
| 10 | 734 | 755 | 777 | 798 | 819 | 840 | 861 | 882 | 903 | 925 | 946 | 40 | 5 | 11.0 |
| 20 | 946 | 967 | 988 | *009 | *030 | *051 | *072 | *093 | *114 | *135 | *156 | 30 | 6 | 13.2 |
| 30 | 8.00 156 | 177 | 198 | 219 | 240 | 261 | 282 | 303 | 324 | 344 | 365 | 20 | 7 | 15.4 |
| 40 | 365 | 386 | 407 | 428 | 449 | 470 | 490 | 511 | 532 | 553 | 574 | 10 | 8 | 17.6 |
| 50 | 574 | 594 | 615 | 636 | 657 | 677 | 698 | 719 | 740 | 760 | 781 | 0 25 | 9 | 19.8 |
| 35 o | 781 | 802 | 822 | 843 | 864 | 884 | 905 | 925 | 946 | 967 | 987 | 50 | | 21 |
| 10 | 987 | *008 | *028 | *049 | *070 | *090 | *111 | *131 | *152 | *172 | *193 | 40 | 1 | 2.1 |
| 20 | 8.01 193 | 213 | 234 | 254 | 274 | 295 | 315 | 336 | 356 | 377 | 397 | 30 | 2 | 4.2 |
| 30 | 397 | 417 | 438 | 458 | 478 | 499 | 519 | 539 | 560 | 580 | 600 | 20 | 3 | 6.3 |
| 40 | 600 | 621 | 641 | 661 | 682 | 702 | 722 | 742 | 762 | 783 | 803 | 10 | 4 | 8.4 |
| 50 | 803 | 823 | 843 | 863 | 884 | 904 | 924 | 944 | 964 | 984 | *004 | 0 24 | 5 | 10.5 |
| 36 o | 8.02 004 | 025 | 045 | 065 | 085 | 105 | 125 | 145 | 165 | 185 | 205 | 50 | 6 | 12.6 |
| 10 | 205 | 225 | 245 | 265 | 285 | 305 | 325 | 345 | 365 | 385 | 405 | 40 | 7 | 14.7 |
| 20 | 405 | 425 | 445 | 464 | 484 | 504 | 524 | 544 | 564 | 584 | 604 | 30 | 8 | 16.8 |
| 30 | 604 | 623 | 643 | 663 | 683 | 703 | 722 | 742 | 762 | 782 | 801 | 20 | 9 | 18.9 |
| 40 | 801 | 821 | 841 | 861 | 880 | 900 | 920 | 939 | 959 | 979 | 998 | 10 | | 20 19 |
| 50 | 998 | *018 | *038 | *057 | *077 | *097 | *116 | *136 | *155 | *175 | *194 | 0 23 | 1 | 2.0 1.9 |
| 37 o | 8.03 194 | 214 | 234 | 253 | 273 | 292 | 312 | 331 | 351 | 370 | 390 | 50 | 2 | 4.0 3.7 |
| 10 | 390 | 409 | 429 | 448 | 468 | 487 | 506 | 526 | 545 | 565 | 584 | 40 | 3 | 6.0 5.7 |
| 20 | 584 | 603 | 623 | 642 | 661 | 681 | 700 | 720 | 739 | 758 | 777 | 30 | 4 | 8.0 7.6 |
| 30 | 777 | 797 | 816 | 835 | 855 | 874 | 893 | 912 | 931 | 951 | 970 | 20 | 5 | 10.0 9.5 |
| 40 | 970 | 989 | *008 | *028 | *047 | *066 | *085 | *104 | *124 | *143 | *162 | 10 | 6 | 12.0 11.4 |
| 50 | 8.04 162 | 181 | 200 | 219 | 238 | 257 | 276 | 296 | 315 | 334 | 353 | 0 22 | 7 | 14.0 13.3 |
| 38 o | 353 | 372 | 391 | 410 | 429 | 448 | 467 | 486 | 505 | 524 | 543 | 50 | 8 | 16.0 15.2 |
| 10 | 543 | 562 | 581 | 600 | 619 | 638 | 656 | 675 | 694 | 713 | 732 | 40 | 9 | 18.0 17.1 |
| 20 | 732 | 751 | 770 | 789 | 808 | 826 | 845 | 864 | 883 | 902 | 921 | 30 | | 18 |
| 30 | 921 | 939 | 958 | 977 | 996 | *014 | *033 | *052 | *071 | *089 | *108 | 20 | 1 | 1.8 |
| 40 | 8.05 108 | 127 | 146 | 164 | 183 | 202 | 220 | 239 | 258 | 276 | 295 | 10 | 2 | 3.6 |
| 50 | 295 | 314 | 332 | 351 | 369 | 388 | 407 | 425 | 444 | 462 | 481 | 0 21 | 3 | 5.4 |
| 39 o | 481 | 499 | 518 | 537 | 555 | 574 | 592 | 611 | 629 | 648 | 666 | 50 | 4 | 7.2 |
| 10 | 666 | 685 | 703 | 722 | 740 | 758 | 777 | 795 | 814 | 832 | 851 | 40 | 5 | 9.0 |
| 20 | 851 | 869 | 887 | 906 | 924 | 943 | 961 | 979 | 998 | *016 | *034 | 30 | 6 | 10.8 |
| 30 | 8.06 034 | 053 | 071 | 089 | 107 | 126 | 144 | 162 | 181 | 199 | 217 | 20 | 7 | 12.6 |
| 40 | 217 | 235 | 254 | 272 | 290 | 308 | 326 | 345 | 363 | 381 | 399 | 10 | 8 | 14.4 |
| 50 | 399 | 417 | 436 | 454 | 472 | 490 | 508 | 526 | 544 | 562 | 581 | 0 20 | 9 | 16.2 |
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|------|------|----------|-----|------|------|------|------|------|------|------|------|------|------|
| 997 | 40 0 | 8.06 578 | 596 | 614 | 632 | 650 | 668 | 686 | 704 | 722 | 740 | 758 | 50 |
| 997 | 10 | 758 | 776 | 794 | 812 | 830 | 848 | 866 | 884 | 902 | 920 | 938 | 40 |
| 997 | 20 | 938 | 956 | 974 | 992 | *010 | *028 | *046 | *063 | *081 | *099 | *117 | 30 |
| 997 | 30 | 8.07 117 | 135 | 153 | 171 | 189 | 206 | 224 | 242 | 260 | 278 | 295 | 20 |
| 997 | 40 | 295 | 313 | 331 | 349 | 367 | 384 | 402 | 420 | 438 | 455 | 473 | 10 |
| 997 | 50 | 473 | 491 | 509 | 526 | 544 | 562 | 579 | 597 | 615 | 632 | 650 | 0 19 |
| 997 | 41 0 | 650 | 668 | 685 | 703 | 721 | 738 | 756 | 773 | 791 | 809 | 826 | 50 |
| 997 | 10 | 826 | 844 | 861 | 879 | 896 | 914 | 932 | 949 | 967 | 984 | *002 | 40 |
| 997 | 20 | 8.08 002 | 019 | 037 | 054 | 072 | 089 | 107 | 124 | 141 | 159 | 176 | 30 |
| 997 | 30 | 176 | 194 | 211 | 229 | 246 | 263 | 281 | 298 | 316 | 333 | 350 | 20 |
| 997 | 40 | 350 | 368 | 385 | 403 | 420 | 437 | 455 | 472 | 489 | 506 | 524 | 10 |
| 997 | 50 | 524 | 541 | 558 | 576 | 593 | 610 | 627 | 645 | 662 | 679 | 696 | 0 18 |
| 997 | 42 0 | 696 | 714 | 731 | 748 | 765 | 783 | 800 | 817 | 834 | 851 | 868 | 50 |
| 997 | 10 | 868 | 886 | 903 | 920 | 937 | 954 | 971 | 988 | *006 | *023 | *040 | 40 |
| 997 | 20 | 8.09 040 | 057 | 074 | 091 | 108 | 125 | 142 | 159 | 176 | 193 | 210 | 30 |
| 997 | 30 | 210 | 227 | 244 | 261 | 278 | 295 | 312 | 329 | 346 | 363 | 380 | 20 |
| 997 | 40 | 380 | 397 | 414 | 431 | 448 | 465 | 482 | 499 | 516 | 533 | 550 | 10 |
| 997 | 50 | 550 | 567 | 583 | 600 | 617 | 634 | 651 | 668 | 685 | 701 | 718 | 0 17 |
| 997 | 43 0 | 718 | 735 | 752 | 769 | 786 | 802 | 819 | 836 | 853 | 870 | 886 | 50 |
| 997 | 10 | 886 | 903 | 920 | 937 | 953 | 970 | 987 | *004 | *020 | *037 | *054 | 40 |
| 997 | 20 | 8.10 054 | 070 | 087 | 104 | 120 | 137 | 154 | 170 | 187 | 204 | 220 | 30 |
| 997 | 30 | 220 | 237 | 254 | 270 | 287 | 303 | 320 | 337 | 353 | 370 | 386 | 20 |
| 996 | 40 | 386 | 403 | 420 | 436 | 453 | 469 | 486 | 502 | 519 | 535 | 552 | 10 |
| 996 | 50 | 552 | 568 | 585 | 601 | 618 | 634 | 651 | 667 | 684 | 700 | 717 | 0 16 |
| 996 | 44 0 | 717 | 733 | 750 | 766 | 782 | 799 | 815 | 832 | 848 | 864 | 881 | 50 |
| 996 | 10 | 881 | 897 | 914 | 930 | 946 | 963 | 979 | 995 | *012 | *028 | *044 | 40 |
| 996 | 20 | 8.11 044 | 061 | 077 | 093 | 110 | 126 | 142 | 159 | 175 | 191 | 207 | 30 |
| 996 | 30 | 207 | 224 | 240 | 256 | 272 | 289 | 305 | 321 | 337 | 354 | 370 | 20 |
| 996 | 40 | 370 | 386 | 402 | 418 | 435 | 451 | 467 | 483 | 499 | 515 | 531 | 10 |
| 996 | 50 | 531 | 548 | 564 | 580 | 596 | 612 | 628 | 644 | 660 | 677 | 693 | 0 15 |
| 996 | 45 0 | 693 | 709 | 725 | 741 | 757 | 773 | 789 | 805 | 821 | 837 | 853 | 50 |
| 996 | 10 | 853 | 869 | 885 | 901 | 917 | 933 | 949 | 965 | 981 | 997 | *013 | 40 |
| 996 | 20 | 8.12 013 | 029 | 045 | 061 | 077 | 093 | 109 | 125 | 141 | 157 | 172 | 30 |
| 996 | 30 | 172 | 188 | 204 | 220 | 236 | 252 | 268 | 284 | 300 | 315 | 331 | 20 |
| 996 | 40 | 331 | 347 | 363 | 379 | 395 | 410 | 426 | 442 | 458 | 474 | 489 | 10 |
| 996 | 50 | 489 | 505 | 521 | 537 | 553 | 568 | 584 | 600 | 616 | 631 | 647 | 0 14 |
| 996 | 46 0 | 647 | 663 | 679 | 694 | 710 | 726 | 741 | 757 | 773 | 788 | 804 | 50 |
| 996 | 10 | 804 | 820 | 836 | 851 | 867 | 882 | 898 | 914 | 929 | 945 | 961 | 40 |
| 996 | 20 | 961 | 976 | 992 | *007 | *023 | *039 | *054 | *070 | *085 | *101 | *117 | 30 |
| 996 | 30 | 8.13 117 | 132 | 148 | 163 | 179 | 194 | 210 | 225 | 241 | 256 | 272 | 20 |
| 996 | 40 | 272 | 287 | 303 | 318 | 334 | 349 | 365 | 380 | 396 | 411 | 427 | 10 |
| 996 | 50 | 427 | 442 | 458 | 473 | 489 | 504 | 519 | 535 | 550 | 566 | 581 | 0 13 |
| 996 | 47 0 | 581 | 596 | 612 | 627 | 643 | 658 | 673 | 689 | 704 | 719 | 735 | 50 |
| 996 | 10 | 735 | 750 | 765 | 781 | 796 | 811 | 827 | 842 | 857 | 873 | 888 | 40 |
| 996 | 20 | 888 | 903 | 919 | 934 | 949 | 964 | 980 | 995 | *010 | *025 | *041 | 30 |
| 996 | 30 | 8.14 041 | 056 | 071 | 086 | 101 | 117 | 132 | 147 | 162 | 178 | 193 | 20 |
| 996 | 40 | 193 | 208 | 223 | 238 | 253 | 269 | 284 | 299 | 314 | 329 | 344 | 10 |
| 996 | 50 | 344 | 359 | 375 | 390 | 405 | 420 | 435 | 450 | 465 | 480 | 495 | 0 12 |
| 996 | 48 0 | 495 | 510 | 525 | 541 | 556 | 571 | 586 | 601 | 616 | 631 | 646 | 50 |
| 996 | 10 | 646 | 661 | 676 | 691 | 706 | 721 | 736 | 751 | 766 | 781 | 796 | 40 |
| 996 | 20 | 796 | 811 | 826 | 841 | 856 | 871 | 886 | 901 | 915 | 930 | 945 | 30 |
| 996 | 30 | 945 | 960 | 975 | 990 | *005 | *020 | *035 | *050 | *065 | *079 | *094 | 20 |
| 996 | 40 | 8.15 094 | 109 | 124 | 139 | 154 | 169 | 183 | 198 | 213 | 228 | 243 | 10 |
| 996 | 50 | 243 | 258 | 272 | 287 | 302 | 317 | 332 | 346 | 361 | 376 | 391 | 0 11 |
| 996 | 49 0 | 391 | 406 | 420 | 435 | 450 | 465 | 479 | 494 | 509 | 523 | 538 | 50 |
| 996 | 10 | 538 | 553 | 568 | 582 | 597 | 612 | 626 | 641 | 656 | 670 | 685 | 40 |
| 996 | 20 | 685 | 700 | 714 | 729 | 744 | 758 | 773 | 788 | 802 | 817 | 832 | 30 |
| 995 | 30 | 832 | 846 | 861 | 875 | 890 | 905 | 919 | 934 | 948 | 963 | 978 | 20 |
| 995 | 40 | 978 | 992 | *007 | *021 | *036 | *050 | *065 | *079 | *094 | *109 | *123 | 10 |
| 995 | 50 | 8.16 123 | 138 | 152 | 167 | 181 | 196 | 210 | 225 | 239 | 254 | 268 | 0 10 |
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|------|----------|-----|------|------|------|------|------|------|------|------|------|------|---|------|
| 40 o | 8.06 581 | 599 | 617 | 635 | 653 | 671 | 689 | 707 | 725 | 743 | 761 | 50 | | |
| 10 | 761 | 779 | 797 | 815 | 833 | 851 | 869 | 887 | 905 | 923 | 941 | 40 | | |
| 20 | 941 | 959 | 977 | 995 | *013 | *031 | *049 | *066 | *084 | *102 | *120 | 30 | | |
| 30 | 8.07 120 | 138 | 156 | 174 | 192 | 209 | 227 | 245 | 263 | 281 | 298 | 20 | | 18 |
| 40 | 298 | 316 | 334 | 352 | 370 | 387 | 405 | 423 | 441 | 458 | 476 | 10 | 1 | 1.8 |
| 50 | 476 | 494 | 512 | 529 | 547 | 565 | 582 | 600 | 618 | 635 | 653 | 0 19 | 2 | 3.6 |
| 41 o | 653 | 671 | 688 | 706 | 724 | 741 | 759 | 776 | 794 | 812 | 829 | 50 | 3 | 5.4 |
| 10 | 829 | 847 | 864 | 882 | 900 | 917 | 935 | 952 | 970 | 987 | *005 | 40 | 4 | 7.2 |
| 20 | 8.08 005 | 022 | 040 | 057 | 075 | 092 | 110 | 127 | 145 | 162 | 180 | 30 | 5 | 9.0 |
| 30 | 180 | 197 | 214 | 232 | 249 | 267 | 284 | 301 | 319 | 336 | 354 | 20 | 6 | 10.8 |
| 40 | 354 | 371 | 388 | 406 | 423 | 440 | 458 | 475 | 492 | 510 | 527 | 10 | 7 | 12.6 |
| 50 | 527 | 544 | 562 | 579 | 596 | 613 | 631 | 648 | 665 | 682 | 700 | 0 18 | 8 | 14.4 |
| 42 o | 700 | 717 | 734 | 751 | 769 | 786 | 803 | 820 | 837 | 855 | 872 | 50 | 9 | 16.2 |
| 10 | 872 | 889 | 906 | 923 | 940 | 957 | 975 | 992 | *009 | *026 | *043 | 40 | | |
| 20 | 8.09 043 | 060 | 077 | 094 | 111 | 128 | 146 | 163 | 180 | 197 | 214 | 30 | | 17 |
| 30 | 214 | 231 | 248 | 265 | 282 | 299 | 316 | 333 | 350 | 367 | 384 | 20 | 1 | 1.7 |
| 40 | 384 | 401 | 418 | 435 | 452 | 468 | 485 | 502 | 519 | 536 | 553 | 10 | 2 | 3.4 |
| 50 | 553 | 570 | 587 | 604 | 621 | 637 | 654 | 671 | 688 | 705 | 722 | 0 17 | 3 | 5.1 |
| 43 o | 722 | 739 | 755 | 772 | 789 | 806 | 823 | 839 | 856 | 873 | 890 | 50 | 4 | 6.8 |
| 10 | 890 | 907 | 923 | 940 | 957 | 974 | 990 | *007 | *024 | *040 | *057 | 40 | 5 | 8.5 |
| 20 | 8.10 057 | 074 | 091 | 107 | 124 | 141 | 157 | 174 | 191 | 207 | 224 | 30 | 6 | 10.2 |
| 30 | 224 | 240 | 257 | 274 | 290 | 307 | 324 | 340 | 357 | 373 | 390 | 20 | 7 | 11.9 |
| 40 | 390 | 407 | 423 | 440 | 456 | 473 | 489 | 506 | 522 | 539 | 555 | 10 | 8 | 13.6 |
| 50 | 555 | 572 | 588 | 605 | 621 | 638 | 654 | 671 | 687 | 704 | 720 | 0 16 | 9 | 15.3 |
| 44 o | 720 | 737 | 753 | 770 | 786 | 802 | 819 | 835 | 852 | 868 | 884 | 50 | | |
| 10 | 884 | 901 | 917 | 934 | 950 | 966 | 983 | 999 | *015 | *032 | *048 | 40 | | 16 |
| 20 | 8.11 048 | 064 | 081 | 097 | 113 | 130 | 146 | 162 | 178 | 195 | 211 | 30 | 1 | 1.6 |
| 30 | 211 | 227 | 244 | 260 | 276 | 292 | 309 | 325 | 341 | 357 | 373 | 20 | 2 | 3.2 |
| 40 | 373 | 390 | 406 | 422 | 438 | 454 | 471 | 487 | 503 | 519 | 535 | 10 | 3 | 4.8 |
| 50 | 535 | 551 | 567 | 584 | 600 | 616 | 632 | 648 | 664 | 680 | 696 | 0 15 | 4 | 6.4 |
| 45 o | 696 | 712 | 729 | 745 | 761 | 777 | 793 | 809 | 825 | 841 | 857 | 50 | 5 | 8.0 |
| 10 | 857 | 873 | 889 | 905 | 921 | 937 | 953 | 969 | 985 | *001 | *017 | 40 | 6 | 9.6 |
| 20 | 8.12 017 | 033 | 049 | 065 | 081 | 097 | 113 | 129 | 144 | 160 | 176 | 30 | 7 | 11.2 |
| 30 | 176 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 303 | 319 | 335 | 20 | 8 | 12.8 |
| 40 | 335 | 351 | 367 | 383 | 398 | 414 | 430 | 446 | 462 | 478 | 493 | 10 | 9 | 14.4 |
| 50 | 493 | 509 | 525 | 541 | 556 | 572 | 588 | 604 | 620 | 635 | 651 | 0 14 | | |
| 46 o | 651 | 667 | 682 | 698 | 714 | 730 | 745 | 761 | 777 | 792 | 808 | 50 | | |
| 10 | 808 | 824 | 839 | 855 | 871 | 886 | 902 | 918 | 933 | 949 | 965 | 40 | | 15 |
| 20 | 965 | 980 | 996 | *011 | *027 | *043 | *058 | *074 | *089 | *105 | *121 | 30 | 1 | 1.5 |
| 30 | 8.13 121 | 136 | 152 | 167 | 183 | 198 | 214 | 229 | 245 | 260 | 276 | 20 | 2 | 3.0 |
| 40 | 276 | 291 | 307 | 322 | 338 | 353 | 369 | 384 | 400 | 415 | 431 | 10 | 3 | 4.5 |
| 50 | 431 | 446 | 462 | 477 | 493 | 508 | 523 | 539 | 554 | 570 | 585 | 0 13 | 4 | 6.0 |
| 47 o | 585 | 601 | 616 | 631 | 647 | 662 | 677 | 693 | 708 | 724 | 739 | 50 | 5 | 7.5 |
| 10 | 739 | 754 | 770 | 785 | 800 | 816 | 831 | 846 | 861 | 877 | 892 | 40 | 6 | 9.0 |
| 20 | 892 | 907 | 923 | 938 | 953 | 968 | 984 | 999 | *014 | *029 | *045 | 30 | 7 | 10.5 |
| 30 | 8.14 045 | 060 | 075 | 090 | 106 | 121 | 136 | 151 | 166 | 182 | 197 | 20 | 8 | 12.0 |
| 40 | 197 | 212 | 227 | 242 | 258 | 273 | 288 | 303 | 318 | 333 | 348 | 10 | 9 | 13.5 |
| 50 | 348 | 364 | 379 | 394 | 409 | 424 | 439 | 454 | 469 | 484 | 500 | 0 12 | | |
| 48 o | 500 | 515 | 530 | 545 | 560 | 575 | 590 | 605 | 620 | 635 | 650 | 50 | | |
| 10 | 650 | 665 | 680 | 695 | 710 | 725 | 740 | 755 | 770 | 785 | 800 | 40 | | 14 |
| 20 | 800 | 815 | 830 | 845 | 860 | 875 | 890 | 905 | 920 | 935 | 950 | 30 | 1 | 1.4 |
| 30 | 950 | 965 | 980 | 994 | *009 | *024 | *039 | *054 | *069 | *084 | *099 | 20 | 2 | 2.8 |
| 40 | 8.15 099 | 114 | 128 | 143 | 158 | 173 | 188 | 203 | 218 | 232 | 247 | 10 | 3 | 4.2 |
| 50 | 247 | 262 | 277 | 292 | 306 | 321 | 336 | 351 | 366 | 380 | 395 | 0 11 | 4 | 5.6 |
| 49 o | 395 | 410 | 425 | 439 | 454 | 469 | 484 | 498 | 513 | 528 | 543 | 50 | 5 | 7.0 |
| 10 | 543 | 557 | 572 | 587 | 602 | 616 | 631 | 646 | 660 | 675 | 690 | 40 | 6 | 8.4 |
| 20 | 690 | 704 | 719 | 734 | 748 | 763 | 778 | 792 | 807 | 822 | 836 | 30 | 7 | 9.8 |
| 30 | 836 | 851 | 865 | 880 | 895 | 909 | 924 | 938 | 953 | 968 | 982 | 20 | 8 | 11.2 |
| 40 | 982 | 997 | *011 | *026 | *040 | *055 | *070 | *084 | *099 | *113 | *128 | 10 | 9 | 12.6 |
| 50 | 8.16 128 | 142 | 157 | 171 | 186 | 200 | 215 | 229 | 244 | 258 | 273 | 0 10 | | |
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|------|------|----------|------|------|------|------|------|------|------|------|------|------|-----|
| 995 | 50 0 | 8.16 268 | 283 | 297 | 311 | 326 | 340 | 355 | 369 | 384 | 398 | 413 | 50 |
| 995 | 10 | 413 | 427 | 441 | 456 | 470 | 485 | 499 | 513 | 528 | 542 | 557 | 40 |
| 995 | 20 | 557 | 571 | 585 | 600 | 614 | 628 | 643 | 657 | 672 | 686 | 700 | 30 |
| 995 | 30 | 700 | 715 | 729 | 743 | 757 | 772 | 786 | 800 | 815 | 829 | 843 | 20 |
| 995 | 40 | 843 | 858 | 872 | 886 | 900 | 915 | 929 | 943 | 957 | 972 | 986 | 10 |
| 995 | 50 | 986 | *000 | *014 | *029 | *043 | *057 | *071 | *085 | *100 | *114 | *128 | 0 9 |
| 995 | 51 0 | 8.17 128 | 142 | 156 | 171 | 185 | 199 | 213 | 227 | 241 | 256 | 270 | 50 |
| 995 | 10 | 270 | 284 | 298 | 312 | 326 | 340 | 355 | 369 | 383 | 397 | 411 | 40 |
| 995 | 20 | 411 | 425 | 439 | 453 | 467 | 481 | 495 | 510 | 524 | 538 | 552 | 30 |
| 995 | 30 | 552 | 566 | 580 | 594 | 608 | 622 | 636 | 650 | 664 | 678 | 692 | 20 |
| 995 | 40 | 692 | 706 | 720 | 734 | 748 | 762 | 776 | 790 | 804 | 818 | 832 | 10 |
| 995 | 50 | 832 | 846 | 860 | 874 | 888 | 902 | 916 | 930 | 943 | 957 | 971 | 0 8 |
| 995 | 52 0 | 971 | 985 | 999 | *013 | *027 | *041 | *055 | *069 | *082 | *096 | *110 | 50 |
| 995 | 10 | 8.18 110 | 124 | 138 | 152 | 166 | 180 | 193 | 207 | 221 | 235 | 249 | 40 |
| 995 | 20 | 249 | 263 | 276 | 290 | 304 | 318 | 332 | 345 | 359 | 373 | 387 | 30 |
| 995 | 30 | 387 | 401 | 414 | 428 | 442 | 456 | 469 | 483 | 497 | 511 | 524 | 20 |
| 995 | 40 | 524 | 538 | 552 | 566 | 579 | 593 | 607 | 621 | 634 | 648 | 662 | 10 |
| 995 | 50 | 662 | 675 | 689 | 703 | 716 | 730 | 744 | 757 | 771 | 785 | 798 | 0 7 |
| 995 | 53 0 | 798 | 812 | 826 | 839 | 853 | 867 | 880 | 894 | 908 | 921 | 935 | 50 |
| 995 | 10 | 935 | 948 | 962 | 976 | 989 | *003 | *016 | *030 | *044 | *057 | *071 | 40 |
| 995 | 20 | 8.19 071 | 084 | 098 | 111 | 125 | 139 | 152 | 166 | 179 | 193 | 206 | 30 |
| 995 | 30 | 206 | 220 | 233 | 247 | 260 | 274 | 287 | 301 | 314 | 328 | 341 | 20 |
| 995 | 40 | 341 | 355 | 368 | 382 | 395 | 409 | 422 | 436 | 449 | 463 | 476 | 10 |
| 995 | 50 | 476 | 489 | 503 | 516 | 530 | 543 | 557 | 570 | 583 | 597 | 610 | 0 6 |
| 995 | 54 0 | 610 | 624 | 637 | 650 | 664 | 677 | 691 | 704 | 717 | 731 | 744 | 50 |
| 995 | 10 | 744 | 757 | 771 | 784 | 797 | 811 | 824 | 837 | 851 | 864 | 877 | 40 |
| 995 | 20 | 877 | 891 | 904 | 917 | 931 | 944 | 957 | 971 | 984 | 997 | *010 | 30 |
| 995 | 30 | 8.20 010 | 024 | 037 | 050 | 064 | 077 | 090 | 103 | 117 | 130 | 143 | 20 |
| 995 | 40 | 143 | 156 | 170 | 183 | 196 | 209 | 222 | 236 | 249 | 262 | 275 | 10 |
| 994 | 50 | 275 | 288 | 302 | 315 | 328 | 341 | 354 | 368 | 381 | 394 | 407 | 0 5 |
| 994 | 55 0 | 407 | 420 | 433 | 446 | 460 | 473 | 486 | 499 | 512 | 525 | 538 | 50 |
| 994 | 10 | 538 | 552 | 565 | 578 | 591 | 604 | 617 | 630 | 643 | 656 | 669 | 40 |
| 994 | 20 | 669 | 682 | 696 | 709 | 722 | 735 | 748 | 761 | 774 | 787 | 800 | 30 |
| 994 | 30 | 800 | 813 | 826 | 839 | 852 | 865 | 878 | 891 | 904 | 917 | 930 | 20 |
| 994 | 40 | 930 | 943 | 956 | 969 | 982 | 995 | *008 | *021 | *034 | *047 | *060 | 10 |
| 994 | 50 | 8.21 060 | 073 | 086 | 099 | 112 | 125 | 138 | 151 | 164 | 177 | 189 | 0 4 |
| 994 | 56 0 | 189 | 202 | 215 | 228 | 241 | 254 | 267 | 280 | 293 | 306 | 319 | 50 |
| 994 | 10 | 319 | 331 | 344 | 357 | 370 | 383 | 396 | 409 | 422 | 434 | 447 | 40 |
| 994 | 20 | 447 | 460 | 473 | 486 | 499 | 511 | 524 | 537 | 550 | 563 | 576 | 30 |
| 994 | 30 | 576 | 588 | 601 | 614 | 627 | 640 | 652 | 665 | 678 | 691 | 703 | 20 |
| 994 | 40 | 703 | 716 | 729 | 742 | 754 | 767 | 780 | 793 | 805 | 818 | 831 | 10 |
| 994 | 50 | 831 | 844 | 856 | 869 | 882 | 895 | 907 | 920 | 933 | 945 | 958 | 0 3 |
| 994 | 57 0 | 958 | 971 | 983 | 996 | *009 | *022 | *034 | *047 | *060 | *072 | *085 | 50 |
| 994 | 10 | 8.22 085 | 098 | 110 | 123 | 136 | 148 | 161 | 173 | 186 | 199 | 211 | 40 |
| 994 | 20 | 211 | 224 | 237 | 249 | 262 | 274 | 287 | 300 | 312 | 325 | 337 | 30 |
| 994 | 30 | 337 | 350 | 363 | 375 | 388 | 400 | 413 | 425 | 438 | 451 | 463 | 20 |
| 994 | 40 | 463 | 476 | 488 | 501 | 513 | 526 | 538 | 551 | 563 | 576 | 588 | 10 |
| 994 | 50 | 588 | 601 | 613 | 626 | 638 | 651 | 663 | 676 | 688 | 701 | 713 | 0 2 |
| 994 | 58 0 | 713 | 726 | 738 | 751 | 763 | 776 | 788 | 801 | 813 | 826 | 838 | 50 |
| 994 | 10 | 838 | 850 | 863 | 875 | 888 | 900 | 913 | 925 | 937 | 950 | 962 | 40 |
| 994 | 20 | 962 | 975 | 987 | 999 | *012 | *024 | *037 | *049 | *061 | *074 | *086 | 30 |
| 994 | 30 | 8.23 086 | 098 | 111 | 123 | 136 | 148 | 160 | 173 | 185 | 197 | 210 | 20 |
| 994 | 40 | 210 | 222 | 234 | 247 | 259 | 271 | 284 | 296 | 308 | 321 | 333 | 10 |
| 994 | 50 | 333 | 345 | 357 | 370 | 382 | 394 | 407 | 419 | 431 | 443 | 456 | 0 1 |
| 994 | 59 0 | 456 | 468 | 480 | 492 | 505 | 517 | 529 | 541 | 554 | 566 | 578 | 50 |
| 994 | 10 | 578 | 590 | 603 | 615 | 627 | 639 | 652 | 664 | 676 | 688 | 700 | 40 |
| 994 | 20 | 700 | 713 | 725 | 737 | 749 | 761 | 773 | 786 | 798 | 810 | 822 | 30 |
| 994 | 30 | 822 | 834 | 846 | 859 | 871 | 883 | 895 | 907 | 919 | 931 | 944 | 20 |
| 993 | 40 | 944 | 956 | 968 | 980 | 992 | *004 | *016 | *028 | *041 | *053 | *065 | 10 |
| 993 | 50 | 8.24 065 | 077 | 089 | 101 | 113 | 125 | 137 | 149 | 161 | 173 | 186 | 0 0 |
| 9.99 | | 10° | 9° | 8° | 7° | 6° | 5° | 4° | 3° | 2° | 1° | 0° | |

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*90° 180° *270°

| | 0" | 1" | 2" | 3" | 4" | 5" | 6" | 7" | 8" | 9" | 10" | | P | P |
|------|----------|------|------|------|------|------|------|------|------|------|------|-----|----|------|
| 50 o | 8.16 273 | 287 | 302 | 316 | 331 | 345 | 359 | 374 | 388 | 403 | 417 | 50 | | |
| 10 | 417 | 432 | 446 | 460 | 475 | 489 | 504 | 518 | 533 | 547 | 561 | 40 | | |
| 20 | 561 | 576 | 590 | 604 | 619 | 633 | 647 | 662 | 676 | 691 | 705 | 30 | | |
| 30 | 705 | 719 | 734 | 748 | 762 | 776 | 791 | 805 | 819 | 834 | 848 | 20 | | |
| 40 | 848 | 862 | 877 | 891 | 905 | 919 | 934 | 948 | 962 | 976 | 991 | 10 | | |
| 50 | 991 | *005 | *019 | *033 | *048 | *062 | *076 | *090 | *104 | *119 | *133 | 0 9 | 15 | |
| 51 o | 8.17 133 | 147 | 161 | 175 | 190 | 204 | 218 | 232 | 246 | 260 | 275 | 50 | 1 | 1.5 |
| 10 | 275 | 289 | 303 | 317 | 331 | 345 | 359 | 373 | 388 | 402 | 416 | 40 | 2 | 3.0 |
| 20 | 416 | 430 | 444 | 458 | 472 | 486 | 500 | 514 | 528 | 543 | 557 | 30 | 3 | 4.5 |
| 30 | 557 | 571 | 585 | 599 | 613 | 627 | 641 | 655 | 669 | 683 | 697 | 20 | 4 | 6.0 |
| 40 | 697 | 711 | 725 | 739 | 753 | 767 | 781 | 795 | 809 | 823 | 837 | 10 | 5 | 7.5 |
| 50 | 837 | 851 | 865 | 879 | 893 | 907 | 921 | 934 | 948 | 962 | 976 | 0 8 | 6 | 9.0 |
| 52 o | 976 | 990 | *004 | *018 | *032 | *046 | *060 | *074 | *087 | *101 | *115 | 50 | 7 | 10.5 |
| 10 | 8.18 115 | 129 | 143 | 157 | 171 | 185 | 198 | 212 | 226 | 240 | 254 | 40 | 8 | 12.0 |
| 20 | 254 | 268 | 281 | 295 | 309 | 323 | 337 | 351 | 364 | 378 | 392 | 30 | 9 | 13.5 |
| 30 | 392 | 406 | 419 | 433 | 447 | 461 | 475 | 488 | 502 | 516 | 530 | 20 | | |
| 40 | 530 | 543 | 557 | 571 | 585 | 598 | 612 | 626 | 639 | 653 | 667 | 10 | | |
| 50 | 667 | 681 | 694 | 708 | 722 | 735 | 749 | 763 | 776 | 790 | 804 | 0 7 | | |
| 53 o | 804 | 817 | 831 | 845 | 858 | 872 | 886 | 899 | 913 | 926 | 940 | 50 | 14 | |
| 10 | 940 | 954 | 967 | 981 | 994 | *008 | *022 | *035 | *049 | *062 | *076 | 40 | 1 | 1.4 |
| 20 | 8.19 076 | 090 | 103 | 117 | 130 | 144 | 157 | 171 | 184 | 198 | 211 | 30 | 2 | 2.8 |
| 30 | 211 | 225 | 239 | 252 | 266 | 279 | 293 | 306 | 320 | 333 | 347 | 20 | 3 | 4.2 |
| 40 | 347 | 360 | 374 | 387 | 401 | 414 | 427 | 441 | 454 | 468 | 481 | 10 | 4 | 5.6 |
| 50 | 481 | 495 | 508 | 522 | 535 | 548 | 562 | 575 | 589 | 602 | 616 | 0 6 | 5 | 7.0 |
| 54 o | 616 | 629 | 642 | 656 | 669 | 683 | 696 | 709 | 723 | 736 | 749 | 50 | 6 | 8.4 |
| 10 | 749 | 763 | 776 | 789 | 803 | 816 | 830 | 843 | 856 | 870 | 883 | 40 | 7 | 9.8 |
| 20 | 883 | 896 | 910 | 923 | 936 | 949 | 963 | 976 | 989 | *003 | *016 | 30 | 8 | 11.2 |
| 30 | 8.20 016 | 029 | 042 | 056 | 069 | 082 | 096 | 109 | 122 | 135 | 149 | 20 | 9 | 12.6 |
| 40 | 149 | 162 | 175 | 188 | 201 | 215 | 228 | 241 | 254 | 268 | 281 | 10 | | |
| 50 | 281 | 294 | 307 | 320 | 334 | 347 | 360 | 373 | 386 | 399 | 413 | 0 5 | | |
| 55 o | 413 | 426 | 439 | 452 | 465 | 478 | 491 | 505 | 518 | 531 | 544 | 50 | 13 | |
| 10 | 544 | 557 | 570 | 583 | 596 | 610 | 623 | 636 | 649 | 662 | 675 | 40 | 1 | 1.3 |
| 20 | 675 | 688 | 701 | 714 | 727 | 740 | 753 | 767 | 780 | 793 | 806 | 30 | 2 | 2.6 |
| 30 | 806 | 819 | 832 | 845 | 858 | 871 | 884 | 897 | 910 | 923 | 936 | 20 | 3 | 3.9 |
| 40 | 936 | 949 | 962 | 975 | 988 | *001 | *014 | *027 | *040 | *053 | *066 | 10 | 4 | 5.2 |
| 50 | 8.21 066 | 079 | 092 | 105 | 118 | 131 | 144 | 156 | 169 | 182 | 195 | 0 4 | 5 | 6.5 |
| 56 o | 195 | 208 | 221 | 234 | 247 | 260 | 273 | 286 | 299 | 311 | 324 | 50 | 6 | 7.8 |
| 10 | 324 | 337 | 350 | 363 | 376 | 389 | 402 | 414 | 427 | 440 | 453 | 40 | 7 | 9.1 |
| 20 | 453 | 466 | 479 | 492 | 504 | 517 | 530 | 543 | 556 | 569 | 581 | 30 | 8 | 10.4 |
| 30 | 581 | 594 | 607 | 620 | 633 | 645 | 658 | 671 | 684 | 697 | 709 | 20 | 9 | 11.7 |
| 40 | 709 | 722 | 735 | 748 | 760 | 773 | 786 | 799 | 811 | 824 | 837 | 10 | | |
| 50 | 837 | 850 | 862 | 875 | 888 | 901 | 913 | 926 | 939 | 951 | 964 | 0 3 | | |
| 57 o | 964 | 977 | 989 | *002 | *015 | *028 | *040 | *053 | *066 | *078 | *091 | 50 | 12 | |
| 10 | 8.22 091 | 104 | 116 | 129 | 142 | 154 | 167 | 179 | 192 | 205 | 217 | 40 | 1 | 1.2 |
| 20 | 217 | 230 | 243 | 255 | 268 | 280 | 293 | 306 | 318 | 331 | 343 | 30 | 2 | 2.4 |
| 30 | 343 | 356 | 369 | 381 | 394 | 406 | 419 | 431 | 444 | 457 | 469 | 20 | 3 | 3.6 |
| 40 | 469 | 482 | 494 | 507 | 519 | 532 | 544 | 557 | 569 | 582 | 595 | 10 | 4 | 4.8 |
| 50 | 595 | 607 | 620 | 632 | 645 | 657 | 670 | 682 | 695 | 707 | 720 | 0 2 | 5 | 6.0 |
| 58 o | 720 | 732 | 744 | 757 | 769 | 782 | 794 | 807 | 819 | 832 | 844 | 50 | 6 | 7.2 |
| 10 | 844 | 857 | 869 | 881 | 894 | 906 | 919 | 931 | 944 | 956 | 968 | 40 | 7 | 8.4 |
| 20 | 968 | 981 | 993 | *006 | *018 | 030 | *043 | *055 | *068 | *080 | *092 | 30 | 8 | 9.6 |
| 30 | 8.23 092 | 105 | 117 | 130 | 142 | 154 | 167 | 179 | 191 | 204 | 216 | 20 | 9 | 10.8 |
| 40 | 216 | 228 | 241 | 253 | 265 | 278 | 290 | 302 | 315 | 327 | 339 | 10 | | |
| 50 | 339 | 352 | 364 | 376 | 388 | 401 | 413 | 425 | 438 | 450 | 462 | 0 1 | | |
| 59 o | 462 | 474 | 487 | 499 | 511 | 523 | 536 | 548 | 560 | 572 | 585 | 50 | | |
| 10 | 585 | 597 | 609 | 621 | 634 | 646 | 658 | 670 | 682 | 695 | 707 | 40 | | |
| 20 | 707 | 719 | 731 | 743 | 756 | 768 | 780 | 792 | 804 | 816 | 829 | 30 | | |
| 30 | 829 | 841 | 853 | 865 | 877 | 889 | 902 | 914 | 926 | 938 | 950 | 20 | | |
| 40 | 950 | 962 | 974 | 987 | 999 | *011 | *023 | *035 | *047 | *059 | *071 | 10 | | |
| 50 | 8.24 071 | 083 | 096 | 108 | 120 | 132 | 144 | 156 | 168 | 180 | 192 | 0 0 | | |
| | 10" | 9" | 8" | 7" | 6" | 5" | 4" | 3" | 2" | 1" | 0" | | P | P |

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|------|----|----------|------|------|------|------|------|------|-----------------|-------|-------|-------|
| 993 | 0 | 8.24 186 | 306 | 426 | 546 | 665 | 785 | 903 | 120 119 118 | | | |
| 993 | 1 | 903 | *022 | *140 | *258 | *375 | *493 | *609 | 1 | 12.0 | 11.9 | 11.8 |
| 993 | 2 | 8.25 609 | 726 | 842 | 958 | *074 | *189 | *304 | 2 | 24.0 | 23.8 | 23.6 |
| 993 | 3 | 8.26 304 | 419 | 533 | 648 | 761 | 875 | 988 | 3 | 36.0 | 35.7 | 35.4 |
| 992 | 4 | 988 | *101 | *214 | *326 | *438 | *550 | *661 | 4 | 48.0 | 47.6 | 47.2 |
| 992 | 5 | 8.27 661 | 773 | 883 | 994 | *104 | *215 | *324 | 5 | 60.0 | 59.5 | 59.0 |
| 992 | 6 | 8.28 324 | 434 | 543 | 652 | 761 | 869 | 977 | 6 | 72.0 | 71.4 | 70.8 |
| 992 | 7 | 977 | *085 | *193 | *300 | *407 | *514 | *621 | 7 | 84.0 | 83.3 | 82.6 |
| 992 | 8 | 8.29 621 | 727 | 833 | 939 | *044 | *150 | *255 | 8 | 96.0 | 95.2 | 94.4 |
| 991 | 9 | 8.30 255 | 359 | 464 | 568 | 672 | 776 | 879 | 9 | 108.0 | 107.1 | 106.2 |
| 991 | 10 | 879 | 983 | *086 | *188 | *291 | *393 | *495 | 117 116 115 | | | |
| 991 | 11 | 8.31 495 | 597 | 699 | 800 | 901 | *002 | *103 | 1 | 11.7 | 11.6 | 11.5 |
| 991 | 12 | 8.32 103 | 203 | 303 | 403 | 503 | 602 | 702 | 2 | 23.4 | 23.2 | 23.0 |
| 990 | 13 | 702 | 801 | 899 | 998 | *096 | *195 | *292 | 3 | 35.1 | 34.8 | 34.5 |
| 990 | 14 | 8.33 292 | 390 | 488 | 585 | 682 | 779 | 875 | 4 | 46.8 | 46.4 | 46.0 |
| 990 | 15 | 875 | 972 | *068 | *164 | *260 | *355 | *450 | 5 | 58.5 | 58.0 | 57.5 |
| 989 | 16 | 8.34 450 | 546 | 640 | 735 | 830 | 924 | *018 | 6 | 70.2 | 69.6 | 69.0 |
| 989 | 17 | 8.35 018 | 112 | 206 | 299 | 392 | 485 | 578 | 7 | 81.9 | 81.2 | 80.5 |
| 989 | 18 | 578 | 671 | 764 | 856 | 948 | *040 | *131 | 8 | 93.6 | 92.8 | 92.0 |
| 989 | 19 | 8.36 131 | 223 | 314 | 405 | 496 | 587 | 678 | 9 | 105.3 | 104.4 | 103.5 |
| 988 | 20 | 678 | 768 | 858 | 948 | *038 | *128 | *217 | 114 113 112 111 | | | |
| 988 | 21 | 8.37 217 | 306 | 395 | 484 | 573 | 662 | 750 | 1 | 11.4 | 11.3 | 11.2 |
| 988 | 22 | 750 | 838 | 926 | *014 | *101 | *189 | *276 | 2 | 22.8 | 22.6 | 22.4 |
| 987 | 23 | 8.38 276 | 363 | 450 | 537 | 624 | 710 | 796 | 3 | 34.2 | 33.9 | 33.6 |
| 987 | 24 | 796 | 882 | 968 | *054 | *139 | *225 | *310 | 4 | 45.6 | 45.2 | 44.8 |
| 987 | 25 | 8.39 310 | 395 | 480 | 565 | 649 | 734 | 818 | 5 | 57.0 | 56.5 | 56.0 |
| 986 | 26 | 818 | 902 | 986 | *070 | *153 | *237 | *320 | 6 | 68.4 | 67.8 | 67.2 |
| 986 | 27 | 8.40 320 | 403 | 486 | 569 | 651 | 734 | 816 | 7 | 79.8 | 79.1 | 78.4 |
| 986 | 28 | 816 | 898 | 980 | *062 | *144 | *225 | *307 | 8 | 91.2 | 90.4 | 89.6 |
| 985 | 29 | 8.41 307 | 388 | 469 | 550 | 631 | 711 | 792 | 9 | 102.6 | 101.7 | 100.8 |
| 985 | 30 | 792 | 872 | 952 | *032 | *112 | *192 | *272 | 110 109 108 107 | | | |
| 985 | 31 | 8.42 272 | 351 | 430 | 510 | 589 | 667 | 746 | 1 | 11.0 | 10.9 | 10.8 |
| 984 | 32 | 746 | 825 | 903 | 982 | *060 | *138 | *216 | 2 | 22.0 | 21.8 | 21.6 |
| 984 | 33 | 8.43 216 | 293 | 371 | 448 | 526 | 603 | 680 | 3 | 33.0 | 32.7 | 32.4 |
| 984 | 34 | 680 | 757 | 834 | 910 | 987 | *063 | *139 | 4 | 44.0 | 43.6 | 43.2 |
| 983 | 35 | 8.44 139 | 216 | 292 | 367 | 443 | 519 | 594 | 5 | 55.0 | 54.5 | 54.0 |
| 983 | 36 | 594 | 669 | 745 | 820 | 895 | 969 | *044 | 6 | 66.0 | 65.4 | 64.8 |
| 983 | 37 | 8.45 044 | 119 | 193 | 267 | 341 | 415 | 489 | 7 | 77.0 | 76.3 | 75.6 |
| 982 | 38 | 489 | 563 | 637 | 710 | 784 | 857 | 930 | 8 | 88.0 | 87.2 | 86.4 |
| 982 | 39 | 930 | *003 | *076 | *149 | *222 | *294 | *366 | 9 | 99.0 | 98.1 | 97.2 |
| 982 | 40 | 8.46 366 | 439 | 511 | 583 | 655 | 727 | 799 | 106 105 104 103 | | | |
| 981 | 41 | 799 | 870 | 942 | *013 | *084 | *155 | *226 | 1 | 10.6 | 10.5 | 10.4 |
| 981 | 42 | 8.47 226 | 297 | 368 | 439 | 509 | 580 | 650 | 2 | 21.2 | 21.0 | 20.8 |
| 981 | 43 | 650 | 720 | 790 | 860 | 930 | *000 | *069 | 3 | 31.8 | 31.5 | 31.2 |
| 980 | 44 | 8.48 069 | 139 | 208 | 278 | 347 | 416 | 485 | 4 | 42.4 | 42.0 | 41.6 |
| 980 | 45 | 485 | 554 | 622 | 691 | 760 | 828 | 896 | 5 | 53.0 | 52.5 | 52.0 |
| 979 | 46 | 8.49 304 | 372 | 439 | 506 | 574 | 641 | 708 | 6 | 63.6 | 63.0 | 62.4 |
| 979 | 47 | 708 | 775 | 842 | 908 | 975 | *042 | *108 | 7 | 74.2 | 73.5 | 72.8 |
| 979 | 48 | 8.50 168 | 174 | 241 | 307 | 373 | 439 | 504 | 8 | 84.8 | 84.0 | 83.2 |
| 978 | 49 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 9 | 95.4 | 94.5 | 93.6 |
| 977 | 50 | 8.51 287 | 351 | 416 | 480 | 544 | 609 | 673 | 102 101 100 99 | | | |
| 977 | 51 | 673 | 737 | 801 | 864 | 928 | *055 | *119 | 1 | 10.2 | 10.1 | 10.0 |
| 977 | 52 | 8.52 055 | 119 | 182 | 245 | 308 | 371 | 434 | 2 | 20.4 | 20.2 | 20.0 |
| 976 | 53 | 434 | 497 | 560 | 623 | 685 | 748 | 810 | 3 | 30.6 | 30.3 | 30.0 |
| 976 | 54 | 8.53 183 | 245 | 306 | 368 | 429 | 491 | 552 | 4 | 40.8 | 40.4 | 40.0 |
| 975 | 55 | 552 | 614 | 675 | 736 | 797 | 858 | 919 | 5 | 51.0 | 50.5 | 50.0 |
| 974 | 56 | 8.54 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 6 | 61.2 | 60.6 | 60.0 |
| 974 | 57 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 7 | 71.4 | 70.7 | 70.0 |
| 974 | 58 | 8.55 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 8 | 81.6 | 80.8 | 80.0 |
| 974 | 59 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 9 | 91.8 | 90.9 | 90.0 |
| 974 | 60 | 8.56 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 98 97 96 95 | | | |
| 973 | 61 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 1 | 9.8 | 9.7 | 9.6 |
| 973 | 62 | 8.57 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 2 | 19.6 | 19.4 | 19.2 |
| 973 | 63 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 3 | 29.4 | 29.1 | 28.8 |
| 973 | 64 | 8.58 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 4 | 39.2 | 38.8 | 38.4 |
| 973 | 65 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 5 | 49.0 | 48.5 | 48.0 |
| 973 | 66 | 8.59 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 6 | 58.8 | 58.2 | 57.6 |
| 973 | 67 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 7 | 68.6 | 67.9 | 67.2 |
| 973 | 68 | 8.60 019 | 970 | 1030 | *101 | *161 | *222 | *282 | 8 | 78.4 | 77.6 | 76.8 |
| 973 | 69 | 504 | 570 | 636 | 701 | 767 | 832 | 897 | 9 | 88.2 | 87.3 | 86.4 |
| 973 | 70 | 8.61 019 | 970 | 1030 | *101 | *161 | *222 | *282 | P P | | | |

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|----|----------|------|------|------|------|------|------|----|-----|--|--|--|--|
| 0 | 8.24 192 | 313 | 433 | 553 | 672 | 791 | 910 | 59 | | | | | |
| 1 | 910 | *029 | *147 | *265 | *382 | *500 | *616 | 58 | | | | | |
| 2 | 8.25 616 | 733 | 849 | 965 | *081 | *196 | *312 | 57 | | | | | |
| 3 | 8.26 312 | 426 | 541 | 655 | 769 | 882 | 996 | 56 | | | | | |
| 4 | 996 | *109 | *221 | *334 | *446 | *558 | *669 | 55 | | | | | |
| 5 | 8.27 669 | 780 | 891 | *002 | *112 | *223 | *332 | 54 | | | | | |
| 6 | 8.28 332 | 442 | 551 | 660 | 769 | 877 | 986 | 53 | | | | | |
| 7 | 986 | *094 | *201 | *309 | *416 | *523 | *629 | 52 | | | | | |
| 8 | 8.29 629 | 736 | 842 | 947 | *053 | *158 | *263 | 51 | | | | | |
| 9 | 8.30 263 | 368 | 473 | 577 | 681 | 785 | 888 | 50 | | | | | |
| 10 | 888 | 992 | *095 | *198 | *300 | *403 | *505 | 49 | | | | | |
| 11 | 8.31 505 | 606 | 708 | 809 | 911 | *012 | *112 | 48 | | | | | |
| 12 | 8.32 112 | 213 | 313 | 413 | 513 | 612 | 711 | 47 | | | | | |
| 13 | 711 | 810 | 909 | *008 | *106 | *205 | *302 | 46 | | | | | |
| 14 | 8.33 302 | 400 | 498 | 595 | 692 | 789 | 886 | 45 | | | | | |
| 15 | 886 | 982 | *078 | *174 | *270 | *366 | *461 | 44 | | | | | |
| 16 | 8.34 461 | 556 | 651 | 746 | 840 | 935 | *029 | 43 | | | | | |
| 17 | 8.35 029 | 123 | 217 | 310 | 403 | 497 | 590 | 42 | | | | | |
| 18 | 590 | 682 | 775 | 867 | 959 | *051 | *143 | 41 | | | | | |
| 19 | 8.36 143 | 235 | 326 | 417 | 508 | 599 | 689 | 40 | | | | | |
| 20 | 689 | 780 | 870 | 960 | *050 | *140 | *229 | 39 | | | | | |
| 21 | 8.37 229 | 318 | 408 | 497 | 585 | 674 | 762 | 38 | | | | | |
| 22 | 762 | 850 | 938 | *026 | *114 | *202 | *289 | 37 | | | | | |
| 23 | 8.38 289 | 376 | 463 | 550 | 636 | 723 | 809 | 36 | | | | | |
| 24 | 809 | 895 | 981 | *067 | *153 | *238 | *323 | 35 | | | | | |
| 25 | 8.39 323 | 408 | 493 | 578 | 663 | 747 | 832 | 34 | | | | | |
| 26 | 832 | 916 | *000 | *083 | *167 | *250 | *334 | 33 | | | | | |
| 27 | 8.40 334 | 417 | 500 | 583 | 665 | 748 | 830 | 32 | | | | | |
| 28 | 830 | 913 | 995 | *077 | *158 | *240 | *321 | 31 | | | | | |
| 29 | 8.41 321 | 403 | 484 | 565 | 646 | 726 | 807 | 30 | | | | | |
| 30 | 807 | 887 | 967 | *048 | *127 | *207 | *287 | 29 | | | | | |
| 31 | 8.42 287 | 366 | 446 | 525 | 604 | 683 | 762 | 28 | | | | | |
| 32 | 762 | 840 | 919 | 997 | *073 | *154 | *232 | 27 | | | | | |
| 33 | 8.43 232 | 309 | 387 | 464 | 542 | 619 | 696 | 26 | | | | | |
| 34 | 696 | 773 | 850 | 927 | *003 | *080 | *156 | 25 | | | | | |
| 35 | 8.44 156 | 232 | 308 | 384 | 460 | 536 | 611 | 24 | | | | | |
| 36 | 611 | 686 | 762 | 837 | 912 | 987 | *061 | 23 | | | | | |
| 37 | 8.45 061 | 136 | 210 | 285 | 359 | 433 | 507 | 22 | | | | | |
| 38 | 507 | 581 | 655 | 728 | 802 | 875 | 948 | 21 | | | | | |
| 39 | 948 | *021 | *094 | *167 | *240 | *312 | *385 | 20 | | | | | |
| 40 | 8.46 385 | 457 | 529 | 602 | 674 | 745 | 817 | 19 | | | | | |
| 41 | 817 | 889 | 960 | *032 | *103 | *174 | *245 | 18 | | | | | |
| 42 | 8.47 245 | 316 | 387 | 458 | 528 | 599 | 669 | 17 | | | | | |
| 43 | 669 | 740 | 810 | 880 | 950 | *020 | *089 | 16 | | | | | |
| 44 | 8.48 089 | 159 | 228 | 298 | 367 | 436 | 505 | 15 | | | | | |
| 45 | 505 | 574 | 643 | 711 | 780 | 849 | 917 | 14 | | | | | |
| 46 | 917 | 985 | *053 | *121 | *189 | *257 | *325 | 13 | | | | | |
| 47 | 8.49 325 | 393 | 460 | 528 | 595 | 662 | 729 | 12 | | | | | |
| 48 | 729 | 796 | 863 | 930 | 997 | *063 | *130 | 11 | | | | | |
| 49 | 8.50 130 | 196 | 263 | 329 | 395 | 461 | 527 | 10 | | | | | |
| 50 | 527 | 593 | 658 | 724 | 789 | 855 | 920 | 9 | | | | | |
| 51 | 920 | 985 | *050 | *115 | *180 | *245 | *310 | 8 | | | | | |
| 52 | 8.51 310 | 374 | 439 | 503 | 568 | 632 | 696 | 7 | | | | | |
| 53 | 696 | 760 | 824 | 888 | 952 | *015 | *079 | 6 | | | | | |
| 54 | 8.52 079 | 143 | 206 | 269 | 332 | 396 | 459 | 5 | | | | | |
| 55 | 459 | 522 | 584 | 647 | 710 | 772 | 835 | 4 | | | | | |
| 56 | 835 | 897 | 960 | *022 | *084 | *146 | *208 | 3 | | | | | |
| 57 | 8.53 208 | 270 | 332 | 393 | 455 | 516 | 578 | 2 | | | | | |
| 58 | 578 | 639 | 700 | 762 | 823 | 884 | 945 | 1 | | | | | |
| 59 | 945 | *005 | *066 | *127 | *187 | *248 | *308 | 0 | | | | | |
| | 60° | 50° | 40° | 30° | 20° | 10° | 0° | | | | | | |
| | P P | | | | | | | | | | | | |

*178° 268° *358°

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| 52 | | L Cos | | L Sin | | 2° | | *92° | | 182° | | *272° | |
|------|----|----------|------|-------|------|------|------|------|-----|------|---|-------|---|
| 9.99 | ' | 0" | 10" | 20" | 30" | 40" | 50" | 60" | | | | P | P |
| 974 | 0 | 8.54 282 | 342 | 402 | 462 | 522 | 582 | 642 | 59 | 973 | | 61 | |
| 973 | 1 | 642 | 702 | 762 | 821 | 881 | 940 | 999 | 58 | 973 | 1 | 6.1 | |
| 973 | 2 | 999 | *059 | *118 | *177 | *236 | *295 | *354 | 57 | 972 | 2 | 12.2 | |
| 972 | 3 | 8.55 354 | 413 | 471 | 530 | 589 | 647 | 705 | 56 | 972 | 3 | 18.3 | |
| 972 | 4 | 705 | 764 | 822 | 880 | 938 | 996 | *054 | 55 | 971 | 4 | 24.4 | |
| 971 | 5 | 8.56 054 | 112 | 170 | 227 | 285 | 342 | 400 | 54 | 971 | 5 | 30.5 | |
| 971 | 6 | 400 | 457 | 515 | 572 | 629 | 686 | 743 | 53 | 970 | 6 | 36.6 | |
| 970 | 7 | 743 | 800 | 857 | 914 | 970 | *027 | *084 | 52 | 970 | 7 | 42.7 | |
| 970 | 8 | 8.57 084 | 140 | 196 | 253 | 309 | 365 | 421 | 51 | 969 | 8 | 48.8 | |
| 969 | 9 | 421 | 477 | 533 | 589 | 645 | 701 | 757 | 50 | 969 | 9 | 54.9 | |
| 969 | 10 | 757 | 812 | 868 | 923 | 979 | *034 | *089 | 49 | 968 | | 60 | |
| 968 | 11 | 8.58 089 | 144 | 200 | 255 | 310 | 364 | 419 | 48 | 968 | 1 | 6.0 | |
| 968 | 12 | 419 | 474 | 529 | 583 | 638 | 693 | 747 | 47 | 967 | 2 | 12.0 | |
| 967 | 13 | 747 | 801 | 856 | 910 | 964 | *018 | *072 | 46 | 967 | 3 | 18.0 | |
| 967 | 14 | 8.59 072 | 126 | 180 | 234 | 288 | 341 | 395 | 45 | 967 | 4 | 24.0 | |
| 967 | 15 | 395 | 448 | 502 | 555 | 609 | 662 | 715 | 44 | 966 | 5 | 30.0 | |
| 966 | 16 | 715 | 768 | 821 | 874 | 927 | 980 | *033 | 43 | 966 | 6 | 36.0 | |
| 966 | 17 | 8.60 033 | 086 | 139 | 191 | 244 | 296 | 349 | 42 | 965 | 7 | 42.0 | |
| 965 | 18 | 349 | 401 | 454 | 506 | 558 | 610 | 662 | 41 | 964 | 8 | 48.0 | |
| 964 | 19 | 662 | 714 | 766 | 818 | 870 | 922 | 973 | 40 | 964 | 9 | 54.0 | |
| 964 | 20 | 973 | *025 | *077 | *128 | *180 | *231 | *282 | 39 | 963 | | 59 | |
| 963 | 21 | 8.61 282 | 334 | 385 | 436 | 487 | 538 | 589 | 38 | 963 | 1 | 5.9 | |
| 963 | 22 | 589 | 640 | 691 | 742 | 792 | 843 | 894 | 37 | 962 | 2 | 11.8 | |
| 962 | 23 | 894 | 944 | 995 | *045 | *096 | *146 | *196 | 36 | 962 | 3 | 17.7 | |
| 962 | 24 | 8.62 196 | 246 | 297 | 347 | 397 | 447 | 497 | 35 | 961 | 4 | 23.6 | |
| 961 | 25 | 497 | 546 | 596 | 646 | 696 | 745 | 795 | 34 | 961 | 5 | 29.5 | |
| 961 | 26 | 795 | 844 | 894 | 943 | 993 | *042 | *091 | 33 | 960 | 6 | 35.4 | |
| 960 | 27 | 8.63 091 | 140 | 189 | 238 | 288 | 336 | 385 | 32 | 960 | 7 | 41.3 | |
| 960 | 28 | 385 | 434 | 483 | 532 | 580 | 629 | 678 | 31 | 959 | 8 | 47.2 | |
| 959 | 29 | 678 | 726 | 775 | 823 | 871 | 920 | 968 | *30 | 959 | 9 | 53.1 | |
| 959 | 30 | 968 | *016 | *064 | *112 | *160 | *208 | *256 | 29 | 958 | | 58 | |
| 958 | 31 | 8.64 256 | 304 | 352 | 400 | 448 | 495 | 543 | 28 | 958 | 1 | 5.8 | |
| 958 | 32 | 543 | 590 | 638 | 685 | 733 | 780 | 827 | 27 | 957 | 2 | 11.6 | |
| 957 | 33 | 827 | 875 | 922 | 969 | *016 | *063 | *110 | 26 | 956 | 3 | 17.4 | |
| 956 | 34 | 8.65 110 | 157 | 204 | 251 | 298 | 344 | 391 | 25 | 956 | 4 | 23.2 | |
| 956 | 35 | 391 | 438 | 484 | 531 | 577 | 624 | 670 | 24 | 955 | 5 | 29.0 | |
| 955 | 36 | 670 | 717 | 763 | 809 | 855 | 901 | 947 | 23 | 955 | 6 | 34.8 | |
| 955 | 37 | 947 | 994 | *040 | *085 | *131 | *177 | *223 | 22 | 954 | 7 | 40.6 | |
| 954 | 38 | 8.66 223 | 269 | 314 | 360 | 406 | 451 | 497 | 21 | 954 | 8 | 46.4 | |
| 954 | 39 | 497 | 542 | 588 | 633 | 678 | 724 | 769 | 20 | 953 | 9 | 52.2 | |
| 953 | 40 | 769 | 814 | 859 | 904 | 949 | 994 | *039 | 19 | 952 | | 57 | |
| 952 | 41 | 8.67 039 | 084 | 129 | 174 | 219 | 263 | 308 | 18 | 952 | 1 | 5.7 | |
| 952 | 42 | 308 | 353 | 397 | 442 | 486 | 531 | 575 | 17 | 951 | 2 | 11.4 | |
| 951 | 43 | 575 | 619 | 664 | 708 | 752 | 796 | 841 | 16 | 951 | 3 | 17.1 | |
| 951 | 44 | 841 | 885 | 929 | 973 | *017 | *060 | *104 | 15 | 950 | 4 | 22.8 | |
| 950 | 45 | 8.68 104 | 148 | 192 | 236 | 279 | 323 | 367 | 14 | 949 | 5 | 28.5 | |
| 949 | 46 | 367 | 410 | 454 | 497 | 540 | 584 | 627 | 13 | 949 | 6 | 34.2 | |
| 949 | 47 | 627 | 670 | 714 | 757 | 800 | 843 | 886 | 12 | 948 | 7 | 39.9 | |
| 948 | 48 | 886 | 929 | 972 | *015 | *058 | *101 | *144 | 11 | 948 | 8 | 45.6 | |
| 948 | 49 | 8.69 144 | 187 | 229 | 272 | 315 | 357 | 400 | 10 | 947 | 9 | 51.3 | |
| 947 | 50 | 400 | 442 | 485 | 527 | 570 | 612 | 654 | 9 | 946 | | 56 | |
| 946 | 51 | 654 | 697 | 739 | 781 | 823 | 865 | 907 | 8 | 946 | 1 | 5.6 | |
| 946 | 52 | 907 | 949 | 991 | *033 | *075 | *117 | *159 | 7 | 945 | 2 | 11.2 | |
| 945 | 53 | 8.70 159 | 201 | 242 | 284 | 326 | 367 | 409 | 6 | 944 | 3 | 16.8 | |
| 944 | 54 | 409 | 451 | 492 | 534 | 575 | 616 | 658 | 5 | 944 | 4 | 22.4 | |
| 944 | 55 | 658 | 699 | 740 | 781 | 823 | 864 | 905 | 4 | 943 | 5 | 28.0 | |
| 943 | 56 | 905 | 946 | 987 | *028 | *069 | *110 | *151 | 3 | 942 | 6 | 33.6 | |
| 942 | 57 | 8.71 151 | 192 | 232 | 273 | 314 | 355 | 395 | 2 | 942 | 7 | 39.2 | |
| 942 | 58 | 395 | 436 | 476 | 517 | 557 | 598 | 638 | 1 | 941 | 8 | 44.8 | |
| 941 | 59 | 638 | 679 | 719 | 759 | 800 | 840 | 880 | 0 | 940 | 9 | 50.4 | |
| | | 60" | 50" | 40" | 30" | 20" | 10" | 0" | | 9.99 | | P | P |

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*92° 182° *272°

| | 0" | 10" | 20" | 30" | 40" | 50" | 60" | | P P | | |
|----|----------|------|------|------|------|------|------|----|----------|------|------|
| 0 | 8.54 308 | 369 | 429 | 489 | 549 | 609 | 669 | 59 | 55 | 54 | 53 |
| 1 | 669 | 729 | 789 | 848 | 908 | 967 | *027 | 58 | 1 | 5.5 | 5.4 |
| 2 | 8.55 027 | 086 | 145 | 205 | 264 | 323 | 382 | 57 | 2 | 11.0 | 10.8 |
| 3 | 382 | 441 | 499 | 558 | 617 | 675 | 734 | 56 | 3 | 16.5 | 16.2 |
| 4 | 734 | 792 | 850 | 909 | 967 | *025 | *083 | 55 | 4 | 22.0 | 21.6 |
| 5 | 8.56 083 | 141 | 199 | 256 | 314 | 372 | 429 | 54 | 5 | 27.5 | 27.0 |
| 6 | 429 | 487 | 544 | 601 | 659 | 716 | 773 | 53 | 6 | 33.0 | 32.4 |
| 7 | 773 | 830 | 887 | 944 | *000 | *057 | *114 | 52 | 7 | 38.5 | 37.8 |
| 8 | 8.57 114 | 170 | 227 | 283 | 340 | 396 | 452 | 51 | 8 | 44.0 | 43.2 |
| 9 | 452 | 508 | 564 | 620 | 676 | 732 | *788 | 50 | 9 | 49.5 | 48.6 |
| 10 | 788 | 843 | 899 | 955 | *010 | *065 | *121 | 49 | 52 51 | | |
| 11 | 8.58 121 | 176 | 231 | 286 | 341 | 396 | 451 | 48 | 1 | 5.2 | 5.1 |
| 12 | 451 | 506 | 561 | 616 | 670 | 725 | 779 | 47 | 2 | 10.4 | 10.2 |
| 13 | 779 | 834 | 888 | 943 | 997 | *051 | *105 | 46 | 3 | 15.6 | 15.3 |
| 14 | 8.59 105 | 159 | 213 | 267 | 321 | 375 | 428 | 45 | 4 | 20.8 | 20.4 |
| 15 | 428 | 482 | 536 | 589 | 642 | 696 | 749 | 44 | 5 | 26.0 | 25.5 |
| 16 | 749 | 802 | 856 | 909 | 962 | *015 | *068 | 43 | 6 | 31.2 | 30.6 |
| 17 | 8.60 068 | 121 | 173 | 226 | 279 | 331 | 384 | 42 | 7 | 36.4 | 35.7 |
| 18 | 384 | 436 | 489 | 541 | 593 | 646 | 698 | 41 | 8 | 41.6 | 40.8 |
| 19 | 698 | 750 | 802 | 854 | 906 | 958 | *009 | 40 | 9 | 46.8 | 45.9 |
| 20 | 8.61 009 | 061 | 113 | 164 | 216 | 267 | 319 | 39 | 50 49 48 | | |
| 21 | 319 | 370 | 422 | 473 | 524 | 575 | 626 | 38 | 1 | 5.0 | 4.9 |
| 22 | 626 | 677 | 728 | 779 | 830 | 881 | 931 | 37 | 2 | 10.0 | 9.8 |
| 23 | 931 | 982 | *033 | *083 | *134 | *184 | *234 | 36 | 3 | 15.0 | 14.7 |
| 24 | 8.62 234 | 285 | 335 | 385 | 435 | 485 | 535 | 35 | 4 | 20.0 | 19.6 |
| 25 | 535 | 585 | 635 | 685 | 735 | 784 | 834 | 34 | 5 | 25.0 | 24.5 |
| 26 | 834 | 884 | 933 | 983 | *032 | *081 | *131 | 33 | 6 | 30.0 | 29.4 |
| 27 | 8.63 131 | 180 | 229 | 278 | 328 | 377 | 426 | 32 | 7 | 35.0 | 34.3 |
| 28 | 426 | 475 | 523 | 572 | 621 | 670 | 718 | 31 | 8 | 40.0 | 39.2 |
| 29 | 718 | 767 | 816 | 864 | 913 | 961 | *009 | 30 | 9 | 45.0 | 44.1 |
| 30 | 8.64 009 | 058 | 106 | 154 | 202 | 250 | 298 | 29 | 47 46 45 | | |
| 31 | 298 | 346 | 394 | 442 | 490 | 538 | 585 | 28 | 1 | 4.7 | 4.6 |
| 32 | 585 | 633 | 681 | 728 | 776 | 823 | 870 | 27 | 2 | 9.4 | 9.2 |
| 33 | 870 | 918 | 965 | *012 | *060 | *107 | *154 | 26 | 3 | 14.1 | 13.8 |
| 34 | 8.65 154 | 201 | 248 | 295 | 342 | 388 | 435 | 25 | 4 | 18.8 | 18.4 |
| 35 | 435 | 482 | 529 | 575 | 622 | 668 | 715 | 24 | 5 | 23.5 | 23.0 |
| 36 | 715 | 761 | 808 | 854 | 900 | 947 | 993 | 23 | 6 | 28.2 | 27.6 |
| 37 | 993 | *039 | *085 | *131 | *177 | *223 | *269 | 22 | 7 | 32.9 | 32.2 |
| 38 | 8.66 269 | 315 | 361 | 406 | 452 | 498 | 543 | 21 | 8 | 37.6 | 36.8 |
| 39 | 543 | 589 | 634 | 680 | 725 | 771 | 816 | 20 | 9 | 42.3 | 41.4 |
| 40 | 816 | 861 | 906 | 952 | 997 | *042 | *087 | 19 | 44 43 | | |
| 41 | 8.67 087 | 132 | 177 | 222 | 267 | 312 | 356 | 18 | 1 | 4.4 | 4.3 |
| 42 | 356 | 401 | 446 | 490 | 535 | 579 | 624 | 17 | 2 | 8.8 | 8.6 |
| 43 | 624 | 668 | 713 | 757 | 801 | 846 | 890 | 16 | 3 | 13.2 | 12.9 |
| 44 | 890 | 934 | 978 | *022 | *066 | *110 | *154 | 15 | 4 | 17.6 | 17.2 |
| 45 | 8.68 154 | 198 | 242 | 286 | 330 | 373 | 417 | 14 | 5 | 22.0 | 21.5 |
| 46 | 417 | 461 | 504 | 548 | 592 | 635 | 678 | 13 | 6 | 26.4 | 25.8 |
| 47 | 678 | 722 | 765 | 808 | 852 | 895 | 938 | 12 | 7 | 30.8 | 30.1 |
| 48 | 938 | 981 | *024 | *067 | *110 | *153 | *196 | 11 | 8 | 35.2 | 34.4 |
| 49 | 8.69 196 | 239 | 282 | 325 | 368 | 410 | 453 | 10 | 9 | 39.6 | 38.7 |
| 50 | 453 | 496 | 538 | 581 | 623 | 666 | 708 | 9 | 42 41 40 | | |
| 51 | 708 | 750 | 793 | 835 | 877 | 920 | 962 | 8 | 1 | 4.2 | 4.1 |
| 52 | 962 | *004 | *046 | *088 | *130 | *172 | *214 | 7 | 2 | 8.4 | 8.2 |
| 53 | 8.70 214 | 256 | 298 | 339 | 381 | 423 | 465 | 6 | 3 | 12.6 | 12.3 |
| 54 | 465 | 506 | 548 | 589 | 631 | 673 | 714 | 5 | 4 | 16.8 | 16.4 |
| 55 | 714 | 755 | 797 | 838 | 879 | 921 | 962 | 4 | 5 | 21.0 | 20.5 |
| 56 | 962 | *003 | *044 | *085 | *126 | *167 | *208 | 3 | 6 | 25.2 | 24.6 |
| 57 | 8.71 208 | 249 | 290 | 331 | 372 | 413 | 453 | 2 | 7 | 29.4 | 28.7 |
| 58 | 453 | 494 | 535 | 575 | 616 | 657 | 697 | 1 | 8 | 33.6 | 32.8 |
| 59 | 697 | 738 | 778 | 819 | 859 | 899 | 940 | 0 | 9 | 37.8 | 36.9 |
| | 60" | 50" | 40" | 30" | 20" | 10" | 0" | | P P | | |

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| 9.99 | | 0° | 10° | 20° | 30° | 40° | 50° | 60° | | | P | P |
|------|----|----------|------|------|------|------|------|------|----|------|--------|------|
| 940 | 0 | 8.71 880 | 920 | 960 | *000 | *040 | *080 | *120 | 59 | 940 | 40 | 39 |
| 940 | 1 | 8.72 120 | 160 | 200 | 240 | 280 | 320 | 359 | 58 | 939 | 1 4.0 | 3.9 |
| 939 | 2 | 359 | 399 | 439 | 478 | 518 | 558 | 597 | 57 | 938 | 2 8.0 | 7.8 |
| 938 | 3 | 597 | 637 | 676 | 716 | 755 | 794 | 834 | 56 | 938 | 3 12.0 | 11.7 |
| 938 | 4 | 834 | 873 | 912 | 951 | 991 | *030 | *069 | 55 | 937 | 4 16.0 | 15.6 |
| 937 | 5 | 8.73 069 | 108 | 147 | 186 | 225 | 264 | 303 | 54 | 936 | 5 20.0 | 19.5 |
| 936 | 6 | 303 | 342 | 380 | 419 | 458 | 497 | 535 | 53 | 936 | 6 24.0 | 23.4 |
| 936 | 7 | 535 | 574 | 613 | 651 | 690 | 728 | 767 | 52 | 935 | 7 28.0 | 27.3 |
| 935 | 8 | 767 | 805 | 844 | 882 | 920 | 959 | 997 | 51 | 934 | 8 32.0 | 31.2 |
| 934 | 9 | 997 | *035 | *073 | *112 | *150 | *188 | *226 | 50 | 934 | 9 36.0 | 35.1 |
| 934 | 10 | 8.74 226 | 264 | 302 | 340 | 378 | 416 | 454 | 49 | 933 | 38 | 37 |
| 933 | 11 | 454 | 491 | 529 | 567 | 605 | 642 | 680 | 48 | 932 | 1 3.8 | 3.7 |
| 932 | 12 | 680 | 718 | 755 | 793 | 831 | 868 | 906 | 47 | 932 | 2 7.6 | 7.4 |
| 932 | 13 | 906 | 943 | 980 | *018 | *055 | *092 | *130 | 46 | 931 | 3 11.4 | 11.1 |
| 931 | 14 | 8.75 130 | 167 | 204 | 241 | 279 | 316 | 353 | 45 | 930 | 4 15.2 | 14.8 |
| 930 | 15 | 353 | 390 | 427 | 464 | 501 | 538 | 575 | 44 | 929 | 5 19.0 | 18.5 |
| 929 | 16 | 575 | 612 | 648 | 685 | 722 | 759 | 795 | 43 | 929 | 6 22.8 | 22.2 |
| 929 | 17 | 795 | 832 | 869 | 905 | 942 | 979 | *015 | 42 | 928 | 7 26.6 | 25.9 |
| 928 | 18 | 8.76 015 | 052 | 088 | 125 | 161 | 197 | 234 | 41 | 927 | 8 30.4 | 29.6 |
| 927 | 19 | 234 | 270 | 306 | 343 | 379 | 415 | 451 | 40 | 926 | 9 34.2 | 33.3 |
| 926 | 20 | 451 | 487 | 523 | 559 | 595 | 631 | 667 | 39 | 926 | 36 | |
| 926 | 21 | 667 | 703 | 739 | 775 | 811 | 847 | 883 | 38 | 925 | 1 3.6 | |
| 925 | 22 | 883 | 919 | 954 | 990 | *026 | *061 | *097 | 37 | 924 | 2 7.2 | |
| 924 | 23 | 8.77 097 | 133 | 168 | 204 | 239 | 275 | 310 | 36 | 923 | 3 10.8 | |
| 923 | 24 | 310 | 346 | 381 | 416 | 452 | 487 | 522 | 35 | 923 | 4 14.4 | |
| 923 | 25 | 522 | 558 | 593 | 628 | 663 | 698 | 733 | 34 | 922 | 5 18.0 | |
| 922 | 26 | 733 | 768 | 803 | 838 | 873 | 908 | 943 | 33 | 921 | 6 21.6 | |
| 921 | 27 | 943 | 978 | *013 | *048 | *083 | *118 | *152 | 32 | 920 | 7 25.2 | |
| 920 | 28 | 8.78 152 | 187 | 222 | 257 | 291 | 326 | 360 | 31 | 920 | 8 28.8 | |
| 920 | 29 | 360 | 395 | 430 | 464 | 499 | 533 | 568 | 30 | 919 | 9 32.4 | |
| 919 | 30 | 568 | 602 | 636 | 671 | 705 | 739 | 774 | 29 | 918 | 35 | 34 |
| 918 | 31 | 774 | 808 | 842 | 876 | 910 | 945 | 979 | 28 | 917 | 1 3.5 | 3.4 |
| 917 | 32 | 979 | *013 | *047 | *081 | *115 | *149 | *183 | 27 | 917 | 2 7.0 | 6.8 |
| 917 | 33 | 8.79 183 | 217 | 251 | 284 | 318 | 352 | 386 | 26 | 916 | 3 10.5 | 10.2 |
| 916 | 34 | 386 | 420 | 453 | 487 | 521 | 555 | 588 | 25 | 915 | 4 14.0 | 13.6 |
| 915 | 35 | 588 | 622 | 655 | 689 | 722 | 756 | 789 | 24 | 914 | 5 17.5 | 17.0 |
| 914 | 36 | 789 | 823 | 856 | 890 | 923 | 956 | 990 | 23 | 913 | 6 21.0 | 20.4 |
| 913 | 37 | 990 | *023 | *056 | *090 | *123 | *156 | *189 | 22 | 913 | 7 24.5 | 23.8 |
| 913 | 38 | 8.80 189 | 222 | 255 | 289 | 322 | 355 | 388 | 21 | 912 | 8 28.0 | 27.2 |
| 912 | 39 | 388 | 421 | 454 | 487 | 519 | 552 | 585 | 20 | 911 | 9 31.5 | 30.6 |
| 911 | 40 | 585 | 618 | 651 | 684 | 716 | 749 | 782 | 19 | 910 | 33 | 32 |
| 910 | 41 | 782 | 815 | 847 | 880 | 913 | 945 | 978 | 18 | 909 | 1 3.3 | 3.2 |
| 909 | 42 | 978 | *010 | *043 | *075 | *108 | *140 | *173 | 17 | 909 | 2 6.6 | 6.4 |
| 909 | 43 | 8.81 173 | 205 | 237 | 270 | 302 | 334 | 367 | 16 | 908 | 3 9.9 | 9.6 |
| 908 | 44 | 367 | 399 | 431 | 463 | 496 | 528 | 560 | 15 | 907 | 4 13.2 | 12.8 |
| 907 | 45 | 560 | 592 | 624 | 656 | 688 | 720 | 752 | 14 | 906 | 5 16.5 | 16.0 |
| 906 | 46 | 752 | 784 | 816 | 848 | 880 | 912 | 944 | 13 | 905 | 6 19.8 | 19.2 |
| 905 | 47 | 944 | 975 | *007 | *039 | *071 | *103 | *134 | 12 | 904 | 7 23.1 | 22.4 |
| 904 | 48 | 8.82 134 | 166 | 198 | 229 | 261 | 292 | 324 | 11 | 904 | 8 26.4 | 25.6 |
| 904 | 49 | 324 | 356 | 387 | 419 | 450 | 482 | 513 | 10 | 903 | 9 29.7 | 28.8 |
| 903 | 50 | 513 | 544 | 576 | 607 | 639 | 670 | 701 | 9 | 902 | 31 | 30 |
| 902 | 51 | 701 | 732 | 764 | 795 | 826 | 857 | 888 | 8 | 901 | 1 3.1 | 3.0 |
| 901 | 52 | 888 | 920 | 951 | 982 | *013 | *044 | *075 | 7 | 900 | 2 6.2 | 6.0 |
| 900 | 53 | 8.83 075 | 106 | 137 | 168 | 199 | 230 | 261 | 6 | 899 | 3 9.3 | 9.0 |
| 899 | 54 | 261 | 292 | 322 | 353 | 384 | 415 | 446 | 5 | 898 | 4 12.4 | 12.0 |
| 898 | 55 | 446 | 476 | 507 | 538 | 568 | 599 | 630 | 4 | 898 | 5 15.5 | 15.0 |
| 898 | 56 | 630 | 660 | 691 | 721 | 752 | 783 | 813 | 3 | 897 | 6 18.6 | 18.0 |
| 897 | 57 | 813 | 844 | 874 | 904 | 935 | 965 | 996 | 2 | 896 | 7 21.7 | 21.0 |
| 896 | 58 | 996 | *026 | *056 | *087 | *117 | *147 | *177 | 1 | 895 | 8 24.8 | 24.0 |
| 895 | 59 | 8.84 177 | 208 | 238 | 268 | 298 | 328 | 358 | 0 | 894 | 9 27.9 | 27.0 |
| | | 60° | 50° | 40° | 30° | 20° | 10° | 0° | | 9.99 | P | P |

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3°

*93° 183° *273°

| ° | P P | | | | | | | |
|----|----------|------|------|------|------|------|------|----|
| | 0" | 10" | 20" | 30" | 40" | 50" | 60" | |
| 0 | 8.71 940 | 980 | *020 | *060 | *100 | *141 | *181 | 59 |
| 1 | 8.72 181 | 221 | 261 | 301 | 341 | 380 | 420 | 58 |
| 2 | 420 | 460 | 500 | 540 | 579 | 619 | 659 | 57 |
| 3 | 659 | 698 | 738 | 777 | 817 | 856 | 896 | 56 |
| 4 | 896 | 935 | 975 | *014 | *053 | *093 | *132 | 55 |
| 5 | 8.73 132 | 171 | 210 | 249 | 288 | 327 | 366 | 54 |
| 6 | 366 | 405 | 444 | 483 | 522 | 561 | 600 | 53 |
| 7 | 600 | 638 | 677 | 716 | 754 | 793 | 832 | 52 |
| 8 | 832 | 870 | 909 | 947 | 986 | *024 | *063 | 51 |
| 9 | 8.74 063 | 101 | 139 | 178 | 216 | 254 | 292 | 50 |
| 10 | 292 | 330 | 369 | 407 | 445 | 483 | 521 | 49 |
| 11 | 521 | 559 | 597 | 634 | 672 | 710 | 748 | 48 |
| 12 | 748 | 786 | 823 | 861 | 899 | 936 | 974 | 47 |
| 13 | 974 | *012 | *049 | *087 | *124 | *162 | *199 | 46 |
| 14 | 8.75 199 | 236 | 274 | 311 | 348 | 385 | 423 | 45 |
| 15 | 423 | 460 | 497 | 534 | 571 | 608 | 645 | 44 |
| 16 | 645 | 682 | 719 | 756 | 793 | 830 | 867 | 43 |
| 17 | 867 | 904 | 940 | 977 | *014 | *051 | *087 | 42 |
| 18 | 8.76 087 | 124 | 160 | 197 | 233 | 270 | 306 | 41 |
| 19 | 306 | 343 | 379 | 416 | 452 | 488 | 525 | 40 |
| 20 | 525 | 561 | 597 | 633 | 669 | 706 | 742 | 39 |
| 21 | 742 | 778 | 814 | 850 | 886 | 922 | 958 | 38 |
| 22 | 958 | 994 | *030 | *065 | *101 | *137 | *173 | 37 |
| 23 | 8.77 173 | 208 | 244 | 280 | 315 | 351 | 387 | 36 |
| 24 | 387 | 422 | 458 | 493 | 529 | 564 | 600 | 35 |
| 25 | 600 | 635 | 670 | 706 | 741 | 776 | 811 | 34 |
| 26 | 811 | 847 | 882 | 917 | 952 | 987 | *022 | 33 |
| 27 | 8.78 022 | 057 | 092 | 127 | 162 | 197 | 232 | 32 |
| 28 | 232 | 267 | 302 | 337 | 371 | 406 | 441 | 31 |
| 29 | 441 | 475 | 510 | 545 | 579 | 614 | 649 | 30 |
| 30 | 649 | 683 | 718 | 752 | 787 | 821 | 855 | 29 |
| 31 | 855 | 890 | 924 | 958 | 993 | *027 | *061 | 28 |
| 32 | 8.79 061 | 096 | 130 | 164 | 198 | 232 | 266 | 27 |
| 33 | 266 | 300 | 334 | 368 | 402 | 436 | 470 | 26 |
| 34 | 470 | 504 | 538 | 572 | 606 | 639 | 673 | 25 |
| 35 | 673 | 707 | 741 | 774 | 808 | 842 | 875 | 24 |
| 36 | 875 | 909 | 942 | 976 | *009 | *043 | *076 | 23 |
| 37 | 8.80 076 | 110 | 143 | 177 | 210 | 243 | 277 | 22 |
| 38 | 277 | 310 | 343 | 376 | 409 | 443 | 476 | 21 |
| 39 | 476 | 509 | 542 | 575 | 608 | 641 | 674 | 20 |
| 40 | 674 | 707 | 740 | 773 | 806 | 839 | 872 | 19 |
| 41 | 872 | 905 | 937 | 970 | *003 | *036 | *068 | 18 |
| 42 | 8.81 068 | 101 | 134 | 166 | 199 | 232 | 264 | 17 |
| 43 | 264 | 297 | 329 | 362 | 394 | 427 | 459 | 16 |
| 44 | 459 | 491 | 524 | 556 | 588 | 621 | 653 | 15 |
| 45 | 653 | 685 | 717 | 750 | 782 | 814 | 846 | 14 |
| 46 | 846 | 878 | 910 | 942 | 974 | *006 | *038 | 13 |
| 47 | 8.82 038 | 070 | 102 | 134 | 166 | 198 | 230 | 12 |
| 48 | 230 | 262 | 293 | 325 | 357 | 389 | 420 | 11 |
| 49 | 420 | 452 | 484 | 515 | 547 | 579 | 610 | 10 |
| 50 | 610 | 642 | 673 | 705 | 736 | 768 | 799 | 9 |
| 51 | 799 | 831 | 862 | 893 | 925 | 956 | 987 | 8 |
| 52 | 987 | *019 | *050 | *081 | *112 | *144 | *175 | 7 |
| 53 | 8.83 175 | 206 | 237 | 268 | 299 | 330 | 361 | 6 |
| 54 | 361 | 391 | 423 | 454 | 485 | 516 | 547 | 5 |
| 55 | 547 | 578 | 609 | 640 | 671 | 701 | 732 | 4 |
| 56 | 732 | 763 | 794 | 824 | 855 | 886 | 916 | 3 |
| 57 | 916 | 947 | 978 | *008 | *039 | *069 | *100 | 2 |
| 58 | 8.84 100 | 130 | 161 | 191 | 222 | 252 | 282 | 1 |
| 59 | 282 | 313 | 343 | 374 | 404 | 434 | 464 | 0 |
| | 60" | 50" | 40" | 30" | 20" | 10" | 0" | |

*176° 266° *356°

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| | P P | |
|---|------|------|
| | 41 | 40 |
| 1 | 4.1 | 4.0 |
| 2 | 8.2 | 8.0 |
| 3 | 12.3 | 12.0 |
| 4 | 16.4 | 16.0 |
| 5 | 20.5 | 20.0 |
| 6 | 24.6 | 24.0 |
| 7 | 28.7 | 28.0 |
| 8 | 32.8 | 32.0 |
| 9 | 36.9 | 36.0 |
| | 39 | 38 |
| 1 | 3.9 | 3.8 |
| 2 | 7.8 | 7.6 |
| 3 | 11.7 | 11.4 |
| 4 | 15.6 | 15.2 |
| 5 | 19.5 | 19.0 |
| 6 | 23.4 | 22.8 |
| 7 | 27.3 | 26.6 |
| 8 | 31.2 | 30.4 |
| 9 | 35.1 | 34.2 |
| | 37 | 36 |
| 1 | 3.7 | 3.6 |
| 2 | 7.4 | 7.2 |
| 3 | 11.1 | 10.8 |
| 4 | 14.8 | 14.4 |
| 5 | 18.5 | 18.0 |
| 6 | 22.2 | 21.6 |
| 7 | 25.9 | 25.2 |
| 8 | 29.6 | 28.8 |
| 9 | 33.3 | 32.4 |
| | 35 | 34 |
| 1 | 3.5 | 3.4 |
| 2 | 7.0 | 6.8 |
| 3 | 10.5 | 10.2 |
| 4 | 14.0 | 13.6 |
| 5 | 17.5 | 17.0 |
| 6 | 21.0 | 20.4 |
| 7 | 24.5 | 23.8 |
| 8 | 28.0 | 27.2 |
| 9 | 31.5 | 30.6 |
| | 33 | 32 |
| 1 | 3.3 | 3.2 |
| 2 | 6.6 | 6.4 |
| 3 | 9.9 | 9.6 |
| 4 | 13.2 | 12.8 |
| 5 | 16.5 | 16.0 |
| 6 | 19.8 | 19.2 |
| 7 | 23.1 | 22.4 |
| 8 | 26.4 | 25.6 |
| 9 | 29.7 | 28.8 |
| | 31 | 30 |
| 1 | 3.1 | 3.0 |
| 2 | 6.2 | 6.0 |
| 3 | 9.3 | 9.0 |
| 4 | 12.4 | 12.0 |
| 5 | 15.5 | 15.0 |
| 6 | 18.6 | 18.0 |
| 7 | 21.7 | 21.0 |
| 8 | 24.8 | 24.0 |
| 9 | 27.9 | 27.0 |

| 9.99 | | 0° | 10° | 20° | 30° | 40° | 50° | 60° | | | P P |
|------|----|----------|-----|------|------|------|------|------|----|------|--|
| 894 | 0 | 8.84 358 | 389 | 419 | 449 | 479 | 509 | 539 | 59 | 893 | |
| 893 | 1 | 539 | 569 | 599 | 629 | 659 | 688 | 718 | 58 | 892 | |
| 892 | 2 | 718 | 748 | 778 | 808 | 838 | 867 | 897 | 57 | 891 | 31 30 |
| 891 | 3 | 897 | 927 | 957 | 986 | *016 | *045 | *075 | 56 | 891 | |
| 891 | 4 | 8.85 075 | 105 | 134 | 164 | 193 | 223 | 252 | 55 | 890 | 1 3.1 3.0 2 6.2 6.0 |
| 890 | 5 | | 252 | 282 | 311 | 341 | 370 | 400 | 54 | 889 | 3 9.3 9.0 |
| 889 | 6 | | 429 | 458 | 488 | 517 | 546 | 576 | 53 | 888 | 4 12.4 12.0 |
| 888 | 7 | | 605 | 634 | 663 | 693 | 722 | 751 | 52 | 887 | 5 15.5 15.0 |
| 887 | 8 | | 780 | 809 | 838 | 867 | 896 | 926 | 51 | 886 | 6 18.6 18.0 |
| 886 | 9 | | 955 | 984 | *013 | *042 | *070 | *099 | 50 | 885 | 7 21.7 21.0 8 24.8 24.0 9 27.9 27.0 |
| 885 | 10 | 8.86 128 | 157 | 186 | 215 | 244 | 273 | 301 | 49 | 884 | |
| 884 | 11 | | 301 | 330 | 359 | 388 | 416 | 445 | 48 | 883 | |
| 883 | 12 | | 474 | 502 | 531 | 560 | 588 | 617 | 47 | 882 | |
| 882 | 13 | | 645 | 674 | 703 | 731 | 760 | 788 | 46 | 881 | |
| 881 | 14 | | 816 | 845 | 873 | 902 | 930 | 958 | 45 | 880 | 29 |
| 880 | 15 | | 987 | *015 | *043 | *072 | *100 | *128 | 44 | 879 | 1 2.9 |
| 879 | 16 | 8.87 156 | 185 | 213 | 241 | 269 | 297 | 325 | 43 | 879 | 2 5.8 |
| 879 | 17 | | 325 | 354 | 382 | 410 | 438 | 466 | 42 | 878 | 3 8.7 |
| 878 | 18 | | 494 | 522 | 550 | 578 | 606 | 634 | 41 | 877 | 4 11.6 |
| 877 | 19 | | 661 | 689 | 717 | 745 | 773 | 801 | 40 | 876 | 5 14.5 6 17.4 7 20.3 8 23.2 9 26.1 |
| 876 | 20 | | 829 | 856 | 884 | 912 | 940 | 967 | 39 | 875 | |
| 875 | 21 | | 995 | *023 | *050 | *078 | *106 | *133 | 38 | 874 | |
| 874 | 22 | 8.88 161 | 188 | 216 | 243 | 271 | 298 | 326 | 37 | 873 | |
| 873 | 23 | | 326 | 353 | 381 | 408 | 436 | 463 | 36 | 872 | |
| 872 | 24 | | 490 | 518 | 545 | 572 | 600 | 627 | 35 | 871 | |
| 871 | 25 | | 654 | 681 | 709 | 736 | 763 | 790 | 34 | 870 | 28 27 |
| 870 | 26 | | 817 | 845 | 872 | 899 | 926 | 953 | 33 | 869 | 1 2.8 2.7 |
| 869 | 27 | | 980 | *007 | *034 | *061 | *088 | *115 | 32 | 868 | 2 5.6 5.4 |
| 868 | 28 | 8.89 142 | 169 | 196 | 223 | 250 | 277 | 304 | 31 | 867 | 3 8.4 8.1 |
| 867 | 29 | | 304 | 330 | 357 | 384 | 411 | 438 | 30 | 866 | 4 11.2 10.8 |
| 866 | 30 | | 464 | 491 | 518 | 545 | 571 | 598 | 29 | 865 | 5 14.0 13.5 |
| 865 | 31 | | 625 | 651 | 678 | 704 | 731 | 758 | 28 | 864 | 6 16.8 16.2 |
| 864 | 32 | | 784 | 811 | 837 | 864 | 890 | 917 | 27 | 863 | 7 19.6 18.9 |
| 863 | 33 | | 943 | 970 | 996 | *023 | *049 | *075 | 26 | 862 | 8 22.4 21.6 |
| 862 | 34 | 8.90 102 | 128 | 154 | 181 | 207 | 233 | 260 | 25 | 861 | 9 25.2 24.3 |
| 861 | 35 | | 260 | 286 | 312 | 338 | 364 | 391 | 24 | 860 | |
| 860 | 36 | | 417 | 443 | 469 | 495 | 521 | 548 | 23 | 859 | |
| 859 | 37 | | 574 | 600 | 626 | 652 | 678 | 704 | 22 | 858 | |
| 858 | 38 | | 730 | 756 | 782 | 808 | 834 | 859 | 21 | 857 | 26 |
| 857 | 39 | | 885 | 911 | 937 | 963 | 989 | *015 | 20 | 856 | 1 2.6 |
| 856 | 40 | 8.91 040 | 066 | 092 | 118 | 143 | 169 | 195 | 19 | 855 | 2 5.2 |
| 855 | 41 | | 195 | 221 | 246 | 272 | 298 | 323 | 18 | 854 | 3 7.8 |
| 854 | 42 | | 349 | 374 | 400 | 426 | 451 | 477 | 17 | 853 | 4 10.4 |
| 853 | 43 | | 502 | 528 | 553 | 579 | 604 | 630 | 16 | 852 | 5 13.0 |
| 852 | 44 | | 655 | 680 | 706 | 731 | 757 | 782 | 15 | 851 | 6 15.6 |
| 851 | 45 | | 807 | 833 | 858 | 883 | 909 | 934 | 14 | 850 | 7 18.2 |
| 850 | 46 | | 959 | 984 | *010 | *035 | *060 | *085 | 13 | 848 | 8 20.8 |
| 848 | 47 | 8.92 110 | 135 | 161 | 186 | 211 | 236 | 261 | 12 | 847 | 9 23.4 |
| 847 | 48 | | 261 | 286 | 311 | 336 | 361 | 386 | 11 | 846 | |
| 846 | 49 | | 411 | 436 | 461 | 486 | 511 | 536 | 10 | 845 | |
| 845 | 50 | | 561 | 586 | 611 | 636 | 660 | 685 | 9 | 844 | 25 24 |
| 844 | 51 | | 710 | 735 | 760 | 784 | 809 | 834 | 8 | 843 | 1 2.5 2.4 |
| 843 | 52 | | 859 | 883 | 908 | 933 | 957 | 982 | 7 | 842 | 2 5.0 4.8 |
| 842 | 53 | 8.93 007 | 031 | 056 | 081 | 105 | 130 | 154 | 6 | 841 | 3 7.5 7.2 |
| 841 | 54 | | 154 | 179 | 203 | 228 | 253 | 277 | 5 | 840 | 4 10.0 9.6 |
| 840 | 55 | | 301 | 326 | 350 | 375 | 399 | 424 | 4 | 839 | 5 12.5 12.0 |
| 839 | 56 | | 448 | 472 | 497 | 521 | 546 | 570 | 3 | 838 | 6 15.0 14.4 |
| 838 | 57 | | 594 | 619 | 643 | 667 | 691 | 716 | 2 | 837 | 7 17.5 16.8 |
| 837 | 58 | | 740 | 764 | 788 | 812 | 837 | 861 | 1 | 836 | 8 20.0 19.2 |
| 836 | 59 | | 885 | 909 | 933 | 957 | 981 | *006 | 0 | 834 | 9 22.5 21.6 |
| | | 60° | 50° | 40° | 30° | 20° | 10° | 0° | | 9.99 | P P |

| | 0" | 10" | 20" | 30" | 40" | 50" | 60" | | P P | |
|----|----------|-----|------|------|------|------|------|----|-----|--|
| 0 | 8.84 464 | 495 | 525 | 555 | 585 | 615 | 646 | 59 | | |
| 1 | 646 | 676 | 706 | 736 | 766 | 796 | 826 | 58 | | |
| 2 | 826 | 856 | 886 | 916 | 946 | 976 | *006 | 57 | | |
| 3 | 8.85 006 | 036 | 065 | 095 | 125 | 155 | 185 | 56 | | |
| 4 | 185 | 214 | 244 | 274 | 304 | 333 | 363 | 55 | | |
| 5 | 363 | 392 | 422 | 452 | 481 | 511 | 540 | 54 | | |
| 6 | 540 | 570 | 599 | 629 | 658 | 688 | 717 | 53 | | |
| 7 | 717 | 747 | 776 | 805 | 835 | 864 | 893 | 52 | | |
| 8 | 893 | 922 | 952 | 981 | *010 | *039 | *069 | 51 | | |
| 9 | 8.86 069 | 098 | 127 | 156 | 185 | 214 | 243 | 50 | | |
| 10 | 243 | 272 | 301 | 330 | 359 | 388 | 417 | 49 | | |
| 11 | 417 | 447 | 475 | 504 | 533 | 562 | 591 | 48 | | |
| 12 | 591 | 619 | 648 | 677 | 706 | 734 | 763 | 47 | | |
| 13 | 763 | 792 | 821 | 849 | 878 | 907 | 935 | 46 | | |
| 14 | 935 | 964 | 992 | *021 | *049 | *078 | *106 | 45 | | |
| 15 | 8.87 106 | 135 | 163 | 192 | 220 | 249 | 277 | 44 | | |
| 16 | 277 | 305 | 334 | 362 | 390 | 419 | 447 | 43 | | |
| 17 | 447 | 475 | 503 | 532 | 560 | 588 | 616 | 42 | | |
| 18 | 616 | 644 | 673 | 701 | 729 | 757 | 785 | 41 | | |
| 19 | 785 | 813 | 841 | 869 | 897 | 925 | 953 | 40 | | |
| 20 | 953 | 981 | *009 | *037 | *065 | *092 | *120 | 39 | | |
| 21 | 8.88 120 | 148 | 176 | 204 | 231 | 259 | 287 | 38 | | |
| 22 | 287 | 315 | 342 | 370 | 398 | 425 | 453 | 37 | | |
| 23 | 453 | 481 | 508 | 536 | 563 | 591 | 618 | 36 | | |
| 24 | 618 | 646 | 674 | 701 | 728 | 756 | 783 | 35 | | |
| 25 | 783 | 811 | 838 | 866 | 893 | 920 | 948 | 34 | | |
| 26 | 948 | 975 | *002 | *029 | *057 | *084 | 111 | 33 | | |
| 27 | 8.89 111 | 138 | 166 | 193 | 220 | 247 | 274 | 32 | | |
| 28 | 274 | 301 | 328 | 355 | 383 | 410 | 437 | 31 | | |
| 29 | 437 | 464 | 491 | 518 | 545 | 571 | 598 | 30 | | |
| 30 | 598 | 625 | 652 | 679 | 706 | 733 | 760 | 29 | | |
| 31 | 760 | 786 | 813 | 840 | 867 | 894 | 920 | 28 | | |
| 32 | 920 | 947 | 974 | *000 | *027 | *054 | *080 | 27 | | |
| 33 | 8.90 080 | 107 | 134 | 160 | 187 | 213 | 240 | 26 | | |
| 34 | 240 | 266 | 293 | 319 | 346 | 372 | 399 | 25 | | |
| 35 | 399 | 425 | 451 | 478 | 504 | 531 | 557 | 24 | | |
| 36 | 557 | 583 | 610 | 636 | 662 | 688 | 715 | 23 | | |
| 37 | 715 | 741 | 767 | 793 | 820 | 846 | 872 | 22 | | |
| 38 | 872 | 898 | 924 | 950 | 976 | *002 | *029 | 21 | | |
| 39 | 8.91 029 | 055 | 081 | 107 | 133 | 159 | 185 | 20 | | |
| 40 | 185 | 211 | 236 | 262 | 288 | 314 | 340 | 19 | | |
| 41 | 340 | 366 | 392 | 418 | 443 | 469 | 495 | 18 | | |
| 42 | 495 | 521 | 547 | 572 | 598 | 624 | 650 | 17 | | |
| 43 | 650 | 675 | 701 | 727 | 752 | 778 | 803 | 16 | | |
| 44 | 803 | 829 | 855 | 880 | 906 | 931 | 957 | 15 | | |
| 45 | 957 | 982 | *008 | *033 | *059 | *084 | *110 | 14 | | |
| 46 | 8.92 110 | 135 | 160 | 186 | 211 | 237 | 262 | 13 | | |
| 47 | 262 | 287 | 313 | 338 | 363 | 388 | 414 | 12 | | |
| 48 | 414 | 439 | 464 | 489 | 515 | 540 | 565 | 11 | | |
| 49 | 565 | 590 | 615 | 640 | 665 | 691 | 716 | 10 | | |
| 50 | 716 | 741 | 766 | 791 | 816 | 841 | 866 | 9 | | |
| 51 | 866 | 891 | 916 | 941 | 966 | 991 | *016 | 8 | | |
| 52 | 8.93 016 | 040 | 065 | 090 | 115 | 140 | 165 | 7 | | |
| 53 | 165 | 190 | 214 | 239 | 264 | 289 | 313 | 6 | | |
| 54 | 313 | 338 | 363 | 388 | 412 | 437 | 462 | 5 | | |
| 55 | 462 | 486 | 511 | 536 | 560 | 585 | 609 | 4 | | |
| 56 | 609 | 634 | 658 | 683 | 707 | 732 | 756 | 3 | | |
| 57 | 756 | 781 | 805 | 830 | 854 | 879 | 903 | 2 | | |
| 58 | 903 | 928 | 952 | 976 | *001 | *025 | *049 | 1 | | |
| 59 | 8.94 049 | 074 | 098 | 122 | 147 | 171 | 195 | 0 | | |
| | 60" | 50" | 40" | 30" | 20" | 10" | 0" | | P P | |

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|---|------|------|
| | 31 | 30 |
| 1 | 3.1 | 3.0 |
| 2 | 6.2 | 6.0 |
| 3 | 9.3 | 9.0 |
| 4 | 12.4 | 12.0 |
| 5 | 15.5 | 15.0 |
| 6 | 18.6 | 18.0 |
| 7 | 21.7 | 21.0 |
| 8 | 24.8 | 24.0 |
| 9 | 27.9 | 27.0 |

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| | 29 |
| 1 | 2.9 |
| 2 | 5.8 |
| 3 | 8.7 |
| 4 | 11.6 |
| 5 | 14.5 |
| 6 | 17.4 |
| 7 | 20.3 |
| 8 | 23.2 |
| 9 | 26.1 |

| | | |
|---|------|------|
| | 28 | 27 |
| 1 | 2.8 | 2.7 |
| 2 | 5.6 | 5.4 |
| 3 | 8.4 | 8.1 |
| 4 | 11.2 | 10.8 |
| 5 | 14.0 | 13.5 |
| 6 | 16.8 | 16.2 |
| 7 | 19.6 | 18.9 |
| 8 | 22.4 | 21.6 |
| 9 | 25.2 | 24.3 |

| | |
|---|------|
| | 26 |
| 1 | 2.6 |
| 2 | 5.2 |
| 3 | 7.8 |
| 4 | 10.4 |
| 5 | 13.0 |
| 6 | 15.6 |
| 7 | 18.2 |
| 8 | 20.8 |
| 9 | 23.4 |

| | | |
|---|------|------|
| | 25 | 24 |
| 1 | 2.5 | 2.4 |
| 2 | 5.0 | 4.8 |
| 3 | 7.5 | 7.2 |
| 4 | 10.0 | 9.6 |
| 5 | 12.5 | 12.0 |
| 6 | 15.0 | 14.4 |
| 7 | 17.5 | 16.8 |
| 8 | 20.0 | 19.2 |
| 9 | 22.5 | 21.6 |

| 9.99 | | 0° | 10° | 20° | 30° | 40° | 50° | 60° | | | P | P |
|------|----|----------|-----|------|------|------|------|------|----|------|---|------|
| 834 | 0 | 8.94 030 | 054 | 078 | 102 | 126 | 150 | 174 | 59 | 833 | | |
| 833 | 1 | 174 | 198 | 222 | 246 | 270 | 294 | 317 | 58 | 832 | | |
| 832 | 2 | 317 | 341 | 365 | 389 | 413 | 437 | 461 | 57 | 831 | | 24 |
| 831 | 3 | 461 | 484 | 508 | 532 | 556 | 580 | 603 | 56 | 830 | | |
| 830 | 4 | 603 | 627 | 651 | 675 | 698 | 722 | 746 | 55 | 829 | 1 | 2.4 |
| | | | | | | | | | | | 2 | 4.8 |
| 829 | 5 | 746 | 769 | 793 | 817 | 840 | 864 | 887 | 54 | 828 | 3 | 7.2 |
| 828 | 6 | 887 | 911 | 935 | 958 | 982 | *005 | *029 | 53 | 827 | 4 | 9.6 |
| 827 | 7 | 8.95 029 | 052 | 076 | 099 | 123 | 146 | 170 | 52 | 826 | 5 | 12.0 |
| 825 | 8 | 170 | 193 | 216 | 240 | 263 | 287 | 310 | 51 | 824 | 6 | 14.4 |
| 824 | 9 | 310 | 333 | 357 | 380 | 403 | 427 | 450 | 50 | 823 | 7 | 16.8 |
| | | | | | | | | | | | 8 | 19.2 |
| 823 | 10 | 450 | 473 | 496 | 520 | 543 | 566 | 589 | 49 | 822 | 9 | 21.6 |
| 822 | 11 | 589 | 613 | 636 | 659 | 682 | 705 | 728 | 48 | 821 | | |
| 821 | 12 | 728 | 752 | 775 | 798 | 821 | 844 | 867 | 47 | 820 | | |
| 820 | 13 | 867 | 890 | 913 | 936 | 959 | 982 | *005 | 46 | 819 | | |
| 819 | 14 | 8.96 005 | 028 | 051 | 074 | 097 | 120 | 143 | 45 | 817 | | 23 |
| | | | | | | | | | | | 1 | 2.3 |
| 817 | 15 | 143 | 166 | 189 | 212 | 234 | 257 | 280 | 44 | 816 | 2 | 4.6 |
| 816 | 16 | 280 | 303 | 326 | 349 | 371 | 394 | 417 | 43 | 815 | 3 | 6.9 |
| 815 | 17 | 417 | 440 | 462 | 485 | 508 | 531 | 553 | 42 | 814 | 4 | 9.2 |
| 814 | 18 | 553 | 576 | 599 | 621 | 644 | 667 | 689 | 41 | 813 | 5 | 11.5 |
| 813 | 19 | 689 | 712 | 735 | 757 | 780 | 802 | 825 | 40 | 812 | 6 | 13.8 |
| | | | | | | | | | | | 7 | 16.1 |
| 812 | 20 | 825 | 847 | 870 | 892 | 915 | 937 | 960 | 39 | 810 | 8 | 18.4 |
| 810 | 21 | 960 | 982 | *005 | *027 | *050 | *072 | *095 | 38 | 809 | 9 | 20.7 |
| 809 | 22 | 8.97 005 | 117 | 139 | 162 | 184 | 207 | 229 | 37 | 808 | | |
| 808 | 23 | 229 | 251 | 274 | 296 | 318 | 341 | 363 | 36 | 807 | | |
| 807 | 24 | 363 | 385 | 407 | 430 | 452 | 474 | 496 | 35 | 806 | | |
| | | | | | | | | | | | | 22 |
| 806 | 25 | 496 | 518 | 541 | 563 | 585 | 607 | 629 | 34 | 804 | 1 | 2.2 |
| 804 | 26 | 629 | 651 | 674 | 696 | 718 | 740 | 762 | 33 | 803 | 2 | 4.4 |
| 803 | 27 | 762 | 784 | 806 | 828 | 850 | 872 | 894 | 32 | 802 | 3 | 6.6 |
| 802 | 28 | 894 | 916 | 938 | 960 | 982 | *004 | *026 | 31 | 801 | 4 | 8.8 |
| 801 | 29 | 8.98 026 | 048 | 070 | 092 | 114 | 135 | 157 | 30 | 800 | 5 | 11.0 |
| | | | | | | | | | | | 6 | 13.2 |
| 800 | 30 | 157 | 179 | 201 | 223 | 245 | 266 | 288 | 29 | 798 | 7 | 15.4 |
| 798 | 31 | 288 | 310 | 332 | 354 | 375 | 397 | 419 | 28 | 797 | 8 | 17.6 |
| 797 | 32 | 419 | 441 | 462 | 484 | 506 | 527 | 549 | 27 | 796 | 9 | 19.8 |
| 796 | 33 | 549 | 571 | 592 | 614 | 636 | 657 | 679 | 26 | 795 | | |
| 795 | 34 | 679 | 701 | 722 | 744 | 765 | 787 | 808 | 25 | 793 | | |
| | | | | | | | | | | | | |
| 793 | 35 | 808 | 830 | 851 | 873 | 894 | 916 | 937 | 24 | 792 | | |
| 792 | 36 | 937 | 959 | 980 | *002 | *023 | *045 | *066 | 23 | 791 | | 21 |
| 791 | 37 | 8.99 066 | 087 | 109 | 130 | 152 | 173 | 194 | 22 | 790 | 1 | 2.1 |
| 790 | 38 | 104 | 216 | 237 | 258 | 280 | 301 | 322 | 21 | 788 | 2 | 4.2 |
| 788 | 39 | 322 | 343 | 365 | 386 | 407 | 428 | 450 | 20 | 787 | 3 | 6.3 |
| | | | | | | | | | | | 4 | 8.4 |
| 787 | 40 | 450 | 471 | 492 | 513 | 534 | 556 | 577 | 19 | 786 | 5 | 10.5 |
| 786 | 41 | 577 | 598 | 619 | 640 | 661 | 682 | 704 | 18 | 785 | 6 | 12.6 |
| 785 | 42 | 704 | 725 | 746 | 767 | 788 | 809 | 830 | 17 | 783 | 7 | 14.7 |
| 783 | 43 | 830 | 851 | 872 | 893 | 914 | 935 | 956 | 16 | 782 | 8 | 16.8 |
| 782 | 44 | 956 | 977 | 998 | *019 | *040 | *061 | *082 | 15 | 781 | 9 | 18.9 |
| | | | | | | | | | | | | |
| 781 | 45 | 9.00 082 | 103 | 123 | 144 | 165 | 186 | 207 | 14 | 780 | | |
| 780 | 46 | 207 | 228 | 249 | 269 | 290 | 311 | 332 | 13 | 778 | | |
| 778 | 47 | 332 | 353 | 373 | 394 | 415 | 436 | 456 | 12 | 777 | | |
| 777 | 48 | 456 | 477 | 498 | 518 | 539 | 560 | 581 | 11 | 776 | | |
| 776 | 49 | 581 | 601 | 622 | 642 | 663 | 684 | 704 | 10 | 775 | | |
| | | | | | | | | | | | | |
| 775 | 50 | 704 | 725 | 746 | 766 | 787 | 807 | 828 | 9 | 773 | 1 | 2.0 |
| 773 | 51 | 828 | 848 | 869 | 889 | 910 | 930 | 951 | 8 | 772 | 2 | 4.0 |
| 772 | 52 | 951 | 971 | 992 | *012 | *033 | *053 | *074 | 7 | 771 | 3 | 6.0 |
| 771 | 53 | 9.01 074 | 094 | 115 | 135 | 155 | 176 | 196 | 6 | 769 | 4 | 8.0 |
| 769 | 54 | 196 | 217 | 237 | 257 | 278 | 298 | 318 | 5 | 768 | 5 | 10.0 |
| | | | | | | | | | | | 6 | 12.0 |
| 768 | 55 | 318 | 339 | 359 | 379 | 399 | 420 | 440 | 4 | 767 | 7 | 14.0 |
| 767 | 56 | 440 | 460 | 480 | 501 | 521 | 541 | 561 | 3 | 765 | 8 | 16.0 |
| 765 | 57 | 561 | 582 | 602 | 622 | 642 | 662 | 682 | 2 | 764 | 9 | 18.0 |
| 764 | 58 | 682 | 703 | 723 | 743 | 763 | 783 | 803 | 1 | 763 | | |
| 763 | 59 | 803 | 823 | 843 | 863 | 883 | 903 | 923 | 0 | 761 | | |
| | | | | | | | | | | | | |
| | | 60° | 50° | 40° | 30° | 20° | 10° | 0° | | 9.99 | P | P |

L Tan

5°

*95° 185° *275°

| | 0° | 10° | 20° | 30° | 40° | 50° | 60° | | P | P |
|----|----------|-----|------|------|------|------|------|----|---|------|
| 0 | 8.94 195 | 219 | 244 | 268 | 292 | 316 | 340 | 59 | | |
| 1 | 340 | 365 | 389 | 413 | 437 | 461 | 485 | 58 | | 25 |
| 2 | 485 | 509 | 533 | 557 | 581 | 606 | 630 | 57 | 1 | 2.5 |
| 3 | 630 | 654 | 678 | 702 | 725 | 749 | 773 | 56 | 2 | 5.0 |
| 4 | 773 | 797 | 821 | 845 | 869 | 893 | 917 | 55 | 3 | 7.5 |
| 5 | 917 | 941 | 964 | 988 | *012 | *036 | *060 | 54 | 4 | 10.0 |
| 6 | 8.95 060 | 083 | 107 | 131 | 155 | 178 | 202 | 53 | 5 | 12.5 |
| 7 | 202 | 226 | 249 | 273 | 297 | 320 | 344 | 52 | 6 | 15.0 |
| 8 | 344 | 368 | 391 | 415 | 439 | 462 | 486 | 51 | 7 | 17.5 |
| 9 | 486 | 509 | 533 | 556 | 580 | 603 | 627 | 50 | 8 | 20.0 |
| | | | | | | | | | 9 | 22.5 |
| 10 | 627 | 650 | 674 | 697 | 721 | 744 | 767 | 49 | | 24 |
| 11 | 767 | 791 | 814 | 838 | 861 | 884 | 908 | 48 | 1 | 2.4 |
| 12 | 908 | 931 | 954 | 977 | *001 | *024 | *047 | 47 | 2 | 4.8 |
| 13 | 8.96 047 | 071 | 094 | 117 | 140 | 163 | 187 | 46 | 3 | 7.2 |
| 14 | 187 | 210 | 233 | 256 | 279 | 302 | 325 | 45 | 4 | 9.6 |
| 15 | 325 | 349 | 372 | 395 | 418 | 441 | 464 | 44 | 5 | 12.0 |
| 16 | 464 | 487 | 510 | 533 | 556 | 579 | 602 | 43 | 6 | 14.4 |
| 17 | 602 | 625 | 648 | 671 | 694 | 717 | 739 | 42 | 7 | 16.8 |
| 18 | 739 | 762 | 785 | 808 | 831 | 854 | 877 | 41 | 8 | 19.2 |
| 19 | 877 | 899 | 922 | 945 | 968 | 991 | *013 | 40 | 9 | 21.6 |
| 20 | 8.97 013 | 036 | 059 | 081 | 104 | 127 | 150 | 39 | | 23 |
| 21 | 150 | 172 | 195 | 218 | 240 | 263 | 285 | 38 | 1 | 2.3 |
| 22 | 285 | 308 | 331 | 353 | 376 | 398 | 421 | 37 | 2 | 4.6 |
| 23 | 421 | 443 | 466 | 488 | 511 | 533 | 556 | 36 | 3 | 6.9 |
| 24 | 556 | 578 | 601 | 623 | 646 | 668 | 691 | 35 | 4 | 9.2 |
| 25 | 691 | 713 | 735 | 758 | 780 | 802 | 825 | 34 | 5 | 11.5 |
| 26 | 825 | 847 | 869 | 892 | 914 | 936 | 959 | 33 | 6 | 13.8 |
| 27 | 959 | 981 | *003 | *025 | *048 | *070 | *092 | 32 | 7 | 16.1 |
| 28 | 8.98 092 | 114 | 136 | 159 | 181 | 203 | 225 | 31 | 8 | 18.4 |
| 29 | 225 | 247 | 269 | 291 | 314 | 336 | 358 | 30 | 9 | 20.7 |
| 30 | 358 | 380 | 402 | 424 | 446 | 468 | 490 | 29 | | 22 |
| 31 | 490 | 512 | 534 | 556 | 578 | 600 | 622 | 28 | 1 | 2.2 |
| 32 | 622 | 644 | 666 | 687 | 709 | 731 | 753 | 27 | 2 | 4.4 |
| 33 | 753 | 775 | 797 | 819 | 841 | 862 | 884 | 26 | 3 | 6.6 |
| 34 | 884 | 906 | 928 | 950 | 971 | 993 | *015 | 25 | 4 | 8.8 |
| 35 | 8.99 015 | 037 | 058 | 080 | 102 | 123 | 145 | 24 | 5 | 11.0 |
| 36 | 145 | 167 | 188 | 210 | 232 | 253 | 275 | 23 | 6 | 13.2 |
| 37 | 275 | 297 | 318 | 340 | 361 | 383 | 405 | 22 | 7 | 15.4 |
| 38 | 405 | 426 | 448 | 469 | 491 | 512 | 534 | 21 | 8 | 17.6 |
| 39 | 534 | 555 | 577 | 598 | 620 | 641 | 662 | 20 | 9 | 19.8 |
| 40 | 662 | 684 | 705 | 727 | 748 | 769 | 791 | 19 | | 21 |
| 41 | 791 | 812 | 834 | 855 | 876 | 898 | 919 | 18 | 1 | 2.1 |
| 42 | 919 | 940 | 961 | 983 | *004 | *025 | *046 | 17 | 2 | 4.2 |
| 43 | 9.00 046 | 068 | 089 | 110 | 131 | 153 | 174 | 16 | 3 | 6.3 |
| 44 | 174 | 195 | 216 | 237 | 258 | 280 | 301 | 15 | 4 | 8.4 |
| 45 | 301 | 322 | 343 | 364 | 385 | 406 | 427 | 14 | 5 | 10.5 |
| 46 | 427 | 448 | 469 | 490 | 511 | 532 | 553 | 13 | 6 | 12.6 |
| 47 | 553 | 574 | 595 | 616 | 637 | 658 | 679 | 12 | 7 | 14.7 |
| 48 | 679 | 700 | 721 | 742 | 763 | 784 | 805 | 11 | 8 | 16.8 |
| 49 | 805 | 826 | 846 | 867 | 888 | 909 | 930 | 10 | 9 | 18.9 |
| 50 | 930 | 951 | 971 | 992 | *013 | *034 | *055 | 9 | | 20 |
| 51 | 9.01 055 | 075 | 096 | 117 | 138 | 158 | 179 | 8 | 1 | 2.0 |
| 52 | 179 | 200 | 220 | 241 | 262 | 282 | 303 | 7 | 2 | 4.0 |
| 53 | 303 | 324 | 344 | 365 | 386 | 406 | 427 | 6 | 3 | 6.0 |
| 54 | 427 | 447 | 468 | 489 | 509 | 530 | 550 | 5 | 4 | 8.0 |
| 55 | 550 | 571 | 591 | 612 | 632 | 653 | 673 | 4 | 5 | 10.0 |
| 56 | 673 | 694 | 714 | 735 | 755 | 776 | 796 | 3 | 6 | 12.0 |
| 57 | 796 | 816 | 837 | 857 | 878 | 898 | 918 | 2 | 7 | 14.0 |
| 58 | 918 | 939 | 959 | 979 | *000 | *020 | *040 | 1 | 8 | 16.0 |
| 59 | 9.02 040 | 061 | 081 | 101 | 121 | 142 | 162 | 0 | 9 | 18.0 |
| | 60° | 50° | 40° | 30° | 20° | 10° | 0° | | P | P |

*174° 264° *351°

84°

L Cot

| 9.99 | | 0 | 10" | 20" | 30" | 40" | 50" | 60" | | | P P |
|------|----|----------|------|------|------|------|------|------|----|------|------|
| 761 | 0 | 9.01 923 | 943 | 964 | 984 | *004 | *024 | *043 | 59 | 760 | |
| 760 | 1 | 9.02 043 | 063 | 083 | 103 | 123 | 143 | 163 | 58 | 759 | |
| 759 | 2 | 163 | 183 | 203 | 223 | 243 | 263 | 283 | 57 | 757 | 21 |
| 757 | 3 | 283 | 302 | 322 | 342 | 362 | 382 | 402 | 56 | 756 | 2.1 |
| 756 | 4 | 402 | 421 | 441 | 461 | 481 | 501 | 520 | 55 | 755 | 4.2 |
| 755 | 5 | 520 | 540 | 560 | 579 | 599 | 619 | 639 | 54 | 753 | 6.3 |
| 753 | 6 | 639 | 658 | 678 | 698 | 717 | 737 | 757 | 53 | 752 | 8.4 |
| 752 | 7 | 757 | 776 | 796 | 816 | 835 | 855 | 874 | 52 | 751 | 10.5 |
| 751 | 8 | 874 | 894 | 914 | 933 | 953 | 972 | 992 | 51 | 749 | 12.6 |
| 749 | 9 | 992 | *011 | *031 | *050 | *070 | *089 | *109 | 50 | 748 | 14.7 |
| 748 | 10 | 9.03 109 | 128 | 148 | 167 | 187 | 206 | 226 | 49 | 747 | 16.8 |
| 747 | 11 | 226 | 245 | 265 | 284 | 303 | 323 | 342 | 48 | 745 | 18.9 |
| 745 | 12 | 342 | 361 | 381 | 400 | 420 | 439 | 458 | 47 | 744 | |
| 744 | 13 | 458 | 478 | 497 | 516 | 535 | 555 | 574 | 46 | 742 | 20 |
| 742 | 14 | 574 | 593 | 613 | 632 | 651 | 670 | 690 | 45 | 741 | 2.0 |
| 741 | 15 | 690 | 709 | 728 | 747 | 766 | 786 | 805 | 44 | 740 | 4.0 |
| 740 | 16 | 805 | 824 | 843 | 862 | 881 | 901 | 920 | 43 | 738 | 6.0 |
| 738 | 17 | 920 | 939 | 958 | 977 | 996 | *015 | *034 | 42 | 737 | 8.0 |
| 737 | 18 | 9.04 034 | 053 | 072 | 091 | 110 | 129 | 149 | 41 | 736 | 10.0 |
| 736 | 19 | 149 | 168 | 187 | 206 | 225 | 244 | 262 | 40 | 734 | 12.0 |
| 734 | 20 | 262 | 281 | 300 | 319 | 338 | 357 | 376 | 39 | 733 | 14.0 |
| 733 | 21 | 376 | 395 | 414 | 433 | 452 | 471 | 490 | 38 | 731 | 16.0 |
| 731 | 22 | 490 | 508 | 527 | 546 | 565 | 584 | 603 | 37 | 730 | 18.0 |
| 730 | 23 | 603 | 621 | 640 | 659 | 678 | 697 | 715 | 36 | 728 | |
| 728 | 24 | 715 | 734 | 753 | 772 | 790 | 809 | 828 | 35 | 727 | 19 |
| 727 | 25 | 828 | 847 | 865 | 884 | 903 | 921 | 940 | 34 | 726 | 1.9 |
| 726 | 26 | 940 | 959 | 977 | 996 | *015 | *033 | *052 | 33 | 724 | 3.8 |
| 724 | 27 | 9.05 052 | 071 | 089 | 108 | 126 | 145 | 164 | 32 | 723 | 5.7 |
| 723 | 28 | 164 | 182 | 201 | 219 | 238 | 256 | 275 | 31 | 721 | 7.6 |
| 721 | 29 | 275 | 293 | 312 | 330 | 349 | 367 | 386 | 30 | 720 | 9.5 |
| 720 | 30 | 386 | 404 | 423 | 441 | 460 | 478 | 497 | 29 | 718 | 11.4 |
| 718 | 31 | 497 | 515 | 533 | 552 | 570 | 589 | 607 | 28 | 717 | 13.3 |
| 717 | 32 | 607 | 625 | 644 | 662 | 681 | 699 | 717 | 27 | 716 | 15.2 |
| 716 | 33 | 717 | 736 | 754 | 772 | 791 | 809 | 827 | 26 | 714 | 17.1 |
| 714 | 34 | 827 | 845 | 864 | 882 | 900 | 918 | 937 | 25 | 713 | |
| 713 | 35 | 937 | 955 | 973 | 991 | *010 | *028 | *046 | 24 | 711 | 18 |
| 711 | 36 | 9.06 046 | 064 | 082 | 101 | 119 | 137 | 155 | 23 | 710 | 1.8 |
| 710 | 37 | 155 | 173 | 191 | 210 | 228 | 246 | 264 | 22 | 708 | 3.6 |
| 708 | 38 | 264 | 282 | 300 | 318 | 336 | 354 | 372 | 21 | 707 | 5.4 |
| 707 | 39 | 372 | 390 | 408 | 426 | 445 | 463 | 481 | 20 | 705 | 7.2 |
| 705 | 40 | 481 | 499 | 517 | 535 | 553 | 571 | 589 | 19 | 704 | 9.0 |
| 704 | 41 | 589 | 606 | 624 | 642 | 660 | 678 | 696 | 18 | 702 | 10.8 |
| 702 | 42 | 696 | 714 | 732 | 750 | 768 | 786 | 804 | 17 | 701 | 12.6 |
| 701 | 43 | 804 | 821 | 839 | 857 | 875 | 893 | 911 | 16 | 699 | 14.4 |
| 699 | 44 | 911 | 929 | 946 | 964 | 982 | *000 | *018 | 15 | 698 | 16.2 |
| 698 | 45 | 9.07 018 | 035 | 053 | 071 | 089 | 106 | 124 | 14 | 696 | |
| 696 | 46 | 124 | 142 | 160 | 177 | 195 | 213 | 231 | 13 | 695 | 1.7 |
| 695 | 47 | 231 | 248 | 266 | 284 | 301 | 319 | 337 | 12 | 693 | 3.4 |
| 693 | 48 | 337 | 354 | 372 | 390 | 407 | 425 | 442 | 11 | 692 | 5.1 |
| 692 | 49 | 442 | 460 | 478 | 495 | 513 | 530 | 548 | 10 | 690 | 6.8 |
| 690 | 50 | 548 | 566 | 583 | 601 | 618 | 636 | 653 | 9 | 689 | 8.5 |
| 689 | 51 | 653 | 671 | 688 | 706 | 723 | 741 | 758 | 8 | 687 | 10.2 |
| 687 | 52 | 758 | 776 | 793 | 811 | 828 | 846 | 863 | 7 | 686 | 11.9 |
| 686 | 53 | 863 | 881 | 898 | 915 | 933 | 950 | 968 | 6 | 684 | 13.6 |
| 684 | 54 | 968 | 985 | *002 | *020 | *037 | *055 | *072 | 5 | 683 | 15.3 |
| 683 | 55 | 9.08 072 | 089 | 107 | 124 | 141 | 159 | 176 | 4 | 681 | |
| 681 | 56 | 176 | 193 | 211 | 228 | 245 | 262 | 280 | 3 | 680 | 1.7 |
| 680 | 57 | 280 | 297 | 314 | 331 | 349 | 366 | 383 | 2 | 678 | 3.4 |
| 678 | 58 | 383 | 400 | 418 | 435 | 452 | 469 | 486 | 1 | 677 | 5.1 |
| 677 | 59 | 486 | 504 | 521 | 538 | 555 | 572 | 589 | 0 | 675 | 6.8 |
| | | 60" | 50" | 40 | 30" | 20" | 10" | 0" | | 9.99 | P P |

IV
TABLE OF THE LOGARITHMS
OF THE
TRIGONOMETRIC FUNCTIONS
FROM MINUTE TO MINUTE

| | | L Sin | d | C S | C T | L Tan | c d | L Cot | L Cos | |
|------|----|----------|-------|----------|----------|----------|-------|----------|----------|----|
| 0 | 0 | —∞ | | | | —∞ | | ∞ | 0.00 000 | 60 |
| 60 | 1 | 6.46 373 | 30103 | 5.31 443 | 5.31 443 | 6.46 373 | 30103 | 3.53 627 | 0.00 000 | 59 |
| 120 | 2 | 6.76 476 | 17609 | 5.31 443 | 5.31 443 | 6.76 476 | 17609 | 3.23 524 | 0.00 000 | 58 |
| 180 | 3 | 6.94 085 | 12494 | 5.31 443 | 5.31 443 | 6.94 085 | 12494 | 3.05 915 | 0.00 000 | 57 |
| 240 | 4 | 7.06 579 | 9691 | 5.31 443 | 5.31 442 | 7.06 579 | 9691 | 2.93 421 | 0.00 000 | 56 |
| 300 | 5 | 7.16 270 | 7918 | 5.31 443 | 5.31 442 | 7.16 270 | 7918 | 2.83 730 | 0.00 000 | 55 |
| 360 | 6 | 7.24 188 | 6694 | 5.31 443 | 5.31 442 | 7.24 188 | 6694 | 2.75 812 | 0.00 000 | 54 |
| 420 | 7 | 7.30 882 | 5800 | 5.31 443 | 5.31 442 | 7.30 882 | 5800 | 2.69 118 | 0.00 000 | 53 |
| 480 | 8 | 7.36 682 | 5115 | 5.31 443 | 5.31 442 | 7.36 682 | 5115 | 2.63 318 | 0.00 000 | 52 |
| 540 | 9 | 7.41 797 | 4576 | 5.31 443 | 5.31 442 | 7.41 797 | 4576 | 2.58 203 | 0.00 000 | 51 |
| 600 | 10 | 7.46 373 | 4139 | 5.31 443 | 5.31 442 | 7.46 373 | 4139 | 2.53 627 | 0.00 000 | 50 |
| 660 | 11 | 7.50 512 | 3779 | 5.31 443 | 5.31 442 | 7.50 512 | 3779 | 2.49 488 | 0.00 000 | 49 |
| 720 | 12 | 7.54 291 | 3476 | 5.31 443 | 5.31 442 | 7.54 291 | 3476 | 2.45 709 | 0.00 000 | 48 |
| 780 | 13 | 7.57 767 | 3218 | 5.31 443 | 5.31 442 | 7.57 767 | 3219 | 2.42 233 | 0.00 000 | 47 |
| 840 | 14 | 7.60 985 | 2997 | 5.31 443 | 5.31 442 | 7.60 986 | 2996 | 2.39 014 | 0.00 000 | 46 |
| 900 | 15 | 7.63 982 | 2802 | 5.31 443 | 5.31 442 | 7.63 982 | 2803 | 2.36 018 | 0.00 000 | 45 |
| 960 | 16 | 7.66 784 | 2633 | 5.31 443 | 5.31 442 | 7.66 785 | 2633 | 2.33 215 | 0.00 000 | 44 |
| 1020 | 17 | 7.69 417 | 2483 | 5.31 443 | 5.31 442 | 7.69 418 | 2482 | 2.30 582 | 0.99 999 | 43 |
| 1080 | 18 | 7.71 900 | 2348 | 5.31 443 | 5.31 442 | 7.71 900 | 2348 | 2.28 100 | 0.99 999 | 42 |
| 1140 | 19 | 7.74 248 | 2227 | 5.31 443 | 5.31 442 | 7.74 248 | 2228 | 2.25 752 | 0.99 999 | 41 |
| 1200 | 20 | 7.76 475 | 2119 | 5.31 443 | 5.31 442 | 7.76 476 | 2119 | 2.23 524 | 0.99 999 | 40 |
| 1260 | 21 | 7.78 594 | 2021 | 5.31 443 | 5.31 442 | 7.78 595 | 2020 | 2.21 405 | 0.99 999 | 39 |
| 1320 | 22 | 7.80 615 | 1930 | 5.31 443 | 5.31 442 | 7.80 615 | 1931 | 2.19 385 | 0.99 999 | 38 |
| 1380 | 23 | 7.82 545 | 1848 | 5.31 443 | 5.31 442 | 7.82 546 | 1848 | 2.17 454 | 0.99 999 | 37 |
| 1440 | 24 | 7.84 393 | 1773 | 5.31 443 | 5.31 442 | 7.84 394 | 1773 | 2.15 606 | 0.99 999 | 36 |
| 1500 | 25 | 7.86 166 | 1704 | 5.31 443 | 5.31 442 | 7.86 167 | 1704 | 2.13 833 | 0.99 999 | 35 |
| 1560 | 26 | 7.87 870 | 1639 | 5.31 443 | 5.31 442 | 7.87 871 | 1639 | 2.12 129 | 0.99 999 | 34 |
| 1620 | 27 | 7.89 509 | 1579 | 5.31 443 | 5.31 442 | 7.89 510 | 1579 | 2.10 490 | 0.99 999 | 33 |
| 1680 | 28 | 7.91 088 | 1524 | 5.31 443 | 5.31 442 | 7.91 089 | 1524 | 2.08 911 | 0.99 999 | 32 |
| 1740 | 29 | 7.92 612 | 1472 | 5.31 443 | 5.31 441 | 7.92 613 | 1473 | 2.07 387 | 0.99 998 | 31 |
| 1800 | 30 | 7.94 084 | 1424 | 5.31 443 | 5.31 441 | 7.94 086 | 1424 | 2.05 914 | 0.99 998 | 30 |
| 1860 | 31 | 7.95 508 | 1379 | 5.31 443 | 5.31 441 | 7.95 510 | 1379 | 2.04 499 | 0.99 998 | 29 |
| 1920 | 32 | 7.96 887 | 1336 | 5.31 443 | 5.31 441 | 7.96 889 | 1336 | 2.03 111 | 0.99 998 | 28 |
| 1980 | 33 | 7.98 223 | 1297 | 5.31 443 | 5.31 441 | 7.98 225 | 1297 | 2.01 775 | 0.99 998 | 27 |
| 2040 | 34 | 7.99 520 | 1259 | 5.31 443 | 5.31 441 | 7.99 522 | 1259 | 2.00 478 | 0.99 998 | 26 |
| 2100 | 35 | 8.00 779 | 1223 | 5.31 443 | 5.31 441 | 8.00 781 | 1223 | 1.99 219 | 0.99 998 | 25 |
| 2160 | 36 | 8.02 002 | 1190 | 5.31 443 | 5.31 441 | 8.02 004 | 1190 | 1.97 996 | 0.99 998 | 24 |
| 2220 | 37 | 8.03 192 | 1158 | 5.31 443 | 5.31 441 | 8.03 194 | 1159 | 1.96 806 | 0.99 997 | 23 |
| 2280 | 38 | 8.04 350 | 1128 | 5.31 443 | 5.31 441 | 8.04 353 | 1128 | 1.95 647 | 0.99 997 | 22 |
| 2340 | 39 | 8.05 478 | 1100 | 5.31 443 | 5.31 441 | 8.05 481 | 1100 | 1.94 519 | 0.99 997 | 21 |
| 2400 | 40 | 8.06 578 | 1072 | 5.31 443 | 5.31 441 | 8.06 581 | 1072 | 1.93 419 | 0.99 997 | 20 |
| 2460 | 41 | 8.07 650 | 1046 | 5.31 444 | 5.31 440 | 8.07 653 | 1047 | 1.92 347 | 0.99 997 | 19 |
| 2520 | 42 | 8.08 696 | 1022 | 5.31 444 | 5.31 440 | 8.08 700 | 1022 | 1.91 300 | 0.99 997 | 18 |
| 2580 | 43 | 8.09 718 | 999 | 5.31 444 | 5.31 440 | 8.09 722 | 998 | 1.90 278 | 0.99 997 | 17 |
| 2640 | 44 | 8.10 717 | 976 | 5.31 444 | 5.31 440 | 8.10 720 | 976 | 1.89 280 | 0.99 996 | 16 |
| 2700 | 45 | 8.11 693 | 954 | 5.31 444 | 5.31 440 | 8.11 696 | 955 | 1.88 304 | 0.99 996 | 15 |
| 2760 | 46 | 8.12 647 | 934 | 5.31 444 | 5.31 440 | 8.12 651 | 934 | 1.87 349 | 0.99 996 | 14 |
| 2820 | 47 | 8.13 581 | 914 | 5.31 444 | 5.31 440 | 8.13 585 | 915 | 1.86 415 | 0.99 996 | 13 |
| 2880 | 48 | 8.14 495 | 896 | 5.31 444 | 5.31 440 | 8.14 500 | 895 | 1.85 500 | 0.99 996 | 12 |
| 2940 | 49 | 8.15 391 | 877 | 5.31 444 | 5.31 440 | 8.15 395 | 878 | 1.84 605 | 0.99 996 | 11 |
| 3000 | 50 | 8.16 268 | 860 | 5.31 444 | 5.31 439 | 8.16 273 | 860 | 1.83 727 | 0.99 995 | 10 |
| 3060 | 51 | 8.17 128 | 843 | 5.31 444 | 5.31 439 | 8.17 133 | 843 | 1.82 867 | 0.99 995 | 9 |
| 3120 | 52 | 8.17 971 | 827 | 5.31 444 | 5.31 439 | 8.17 976 | 828 | 1.82 024 | 0.99 995 | 8 |
| 3180 | 53 | 8.18 798 | 812 | 5.31 444 | 5.31 439 | 8.18 804 | 812 | 1.81 196 | 0.99 995 | 7 |
| 3240 | 54 | 8.19 610 | 797 | 5.31 444 | 5.31 439 | 8.19 616 | 797 | 1.80 384 | 0.99 995 | 6 |
| 3300 | 55 | 8.20 407 | 782 | 5.31 444 | 5.31 439 | 8.20 413 | 782 | 1.79 587 | 0.99 994 | 5 |
| 3360 | 56 | 8.21 189 | 769 | 5.31 444 | 5.31 439 | 8.21 195 | 769 | 1.78 805 | 0.99 994 | 4 |
| 3420 | 57 | 8.21 958 | 755 | 5.31 445 | 5.31 439 | 8.21 964 | 756 | 1.78 036 | 0.99 994 | 3 |
| 3480 | 58 | 8.22 713 | 743 | 5.31 445 | 5.31 438 | 8.22 720 | 742 | 1.77 280 | 0.99 994 | 2 |
| 3540 | 59 | 8.23 456 | 730 | 5.31 445 | 5.31 438 | 8.23 462 | 730 | 1.76 538 | 0.99 994 | 1 |
| 3600 | 60 | 8.24 186 | 730 | 5.31 445 | 5.31 438 | 8.24 192 | 730 | 1.75 808 | 0.99 993 | 0 |
| | | L Cos | d | | | L Cot | c d | L Tan | L Sin | |

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*91° 181° *271°

| " | ' | L Sin | d | C S | C T | L Tan | e d | L Cot | L Ces | |
|------|----|----------|-----|----------|----------|----------|-----|----------|----------|----|
| 3600 | 0 | 8.24 186 | | 5.31 445 | 5.31 438 | 8.24 192 | | 1.75 808 | 9.99 993 | 60 |
| 3660 | 1 | 8.24 903 | 717 | 5.31 445 | 5.31 438 | 8.24 910 | 718 | 1.75 090 | 9.99 993 | 59 |
| 3720 | 2 | 8.25 609 | 706 | 5.31 445 | 5.31 438 | 8.25 616 | 706 | 1.74 384 | 9.99 993 | 58 |
| 3780 | 3 | 8.26 304 | 695 | 5.31 445 | 5.31 438 | 8.26 312 | 696 | 1.73 688 | 9.99 993 | 57 |
| 3840 | 4 | 8.26 988 | 684 | 5.31 445 | 5.31 437 | 8.26 996 | 684 | 1.73 004 | 9.99 992 | 56 |
| 3900 | 5 | 8.27 661 | 673 | 5.31 445 | 5.31 437 | 8.27 669 | 673 | 1.72 331 | 9.99 992 | 55 |
| 3960 | 6 | 8.28 324 | 663 | 5.31 445 | 5.31 437 | 8.28 332 | 663 | 1.71 668 | 9.99 992 | 54 |
| 4020 | 7 | 8.28 977 | 653 | 5.31 445 | 5.31 437 | 8.28 986 | 654 | 1.71 014 | 9.99 992 | 53 |
| 4080 | 8 | 8.29 621 | 644 | 5.31 445 | 5.31 437 | 8.29 629 | 643 | 1.70 371 | 9.99 992 | 52 |
| 4140 | 9 | 8.30 255 | 634 | 5.31 445 | 5.31 437 | 8.30 263 | 634 | 1.69 737 | 9.99 991 | 51 |
| 4200 | 10 | 8.30 879 | 624 | 5.31 446 | 5.31 437 | 8.30 888 | 625 | 1.69 112 | 9.99 991 | 50 |
| 4260 | 11 | 8.31 495 | 616 | 5.31 446 | 5.31 436 | 8.31 505 | 617 | 1.68 495 | 9.99 991 | 49 |
| 4320 | 12 | 8.32 103 | 608 | 5.31 446 | 5.31 436 | 8.32 112 | 607 | 1.67 888 | 9.99 990 | 48 |
| 4380 | 13 | 8.32 702 | 599 | 5.31 446 | 5.31 436 | 8.32 711 | 599 | 1.67 289 | 9.99 990 | 47 |
| 4440 | 14 | 8.33 292 | 590 | 5.31 446 | 5.31 436 | 8.33 302 | 591 | 1.66 698 | 9.99 990 | 46 |
| 4500 | 15 | 8.33 875 | 583 | 5.31 446 | 5.31 436 | 8.33 886 | 584 | 1.66 114 | 9.99 990 | 45 |
| 4560 | 16 | 8.34 450 | 575 | 5.31 446 | 5.31 435 | 8.34 461 | 575 | 1.65 539 | 9.99 989 | 44 |
| 4620 | 17 | 8.35 018 | 568 | 5.31 446 | 5.31 435 | 8.35 029 | 568 | 1.64 971 | 9.99 989 | 43 |
| 4680 | 18 | 8.35 578 | 560 | 5.31 446 | 5.31 435 | 8.35 590 | 561 | 1.64 410 | 9.99 989 | 42 |
| 4740 | 19 | 8.36 131 | 553 | 5.31 446 | 5.31 435 | 8.36 143 | 553 | 1.63 857 | 9.99 989 | 41 |
| 4800 | 20 | 8.36 678 | 547 | 5.31 446 | 5.31 435 | 8.36 689 | 546 | 1.63 311 | 9.99 988 | 40 |
| 4860 | 21 | 8.37 217 | 539 | 5.31 447 | 5.31 434 | 8.37 229 | 540 | 1.62 771 | 9.99 988 | 39 |
| 4920 | 22 | 8.37 750 | 533 | 5.31 447 | 5.31 434 | 8.37 762 | 533 | 1.62 238 | 9.99 988 | 38 |
| 4980 | 23 | 8.38 276 | 526 | 5.31 447 | 5.31 434 | 8.38 289 | 527 | 1.61 711 | 9.99 987 | 37 |
| 5040 | 24 | 8.38 796 | 520 | 5.31 447 | 5.31 434 | 8.38 809 | 520 | 1.61 191 | 9.99 987 | 36 |
| 5100 | 25 | 8.39 310 | 514 | 5.31 447 | 5.31 434 | 8.39 323 | 514 | 1.60 677 | 9.99 987 | 35 |
| 5160 | 26 | 8.39 818 | 508 | 5.31 447 | 5.31 433 | 8.39 832 | 509 | 1.60 168 | 9.99 986 | 34 |
| 5220 | 27 | 8.40 320 | 502 | 5.31 447 | 5.31 433 | 8.40 334 | 502 | 1.59 666 | 9.99 986 | 33 |
| 5280 | 28 | 8.40 816 | 496 | 5.31 447 | 5.31 433 | 8.40 830 | 496 | 1.59 170 | 9.99 986 | 32 |
| 5340 | 29 | 8.41 307 | 491 | 5.31 447 | 5.31 433 | 8.41 321 | 491 | 1.58 679 | 9.99 985 | 31 |
| 5400 | 30 | 8.41 792 | 485 | 5.31 447 | 5.31 433 | 8.41 807 | 486 | 1.58 193 | 9.99 985 | 30 |
| 5460 | 31 | 8.42 272 | 480 | 5.31 448 | 5.31 432 | 8.42 287 | 480 | 1.57 713 | 9.99 985 | 29 |
| 5520 | 32 | 8.42 746 | 474 | 5.31 448 | 5.31 432 | 8.42 762 | 475 | 1.57 238 | 9.99 984 | 28 |
| 5580 | 33 | 8.43 216 | 470 | 5.31 448 | 5.31 432 | 8.43 232 | 470 | 1.56 768 | 9.99 984 | 27 |
| 5640 | 34 | 8.43 680 | 464 | 5.31 448 | 5.31 432 | 8.43 696 | 464 | 1.56 304 | 9.99 984 | 26 |
| 5700 | 35 | 8.44 139 | 459 | 5.31 448 | 5.31 431 | 8.44 156 | 460 | 1.55 844 | 9.99 983 | 25 |
| 5760 | 36 | 8.44 594 | 455 | 5.31 448 | 5.31 431 | 8.44 611 | 455 | 1.55 389 | 9.99 983 | 24 |
| 5820 | 37 | 8.45 044 | 450 | 5.31 448 | 5.31 431 | 8.45 061 | 450 | 1.54 939 | 9.99 983 | 23 |
| 5880 | 38 | 8.45 489 | 445 | 5.31 448 | 5.31 431 | 8.45 507 | 446 | 1.54 493 | 9.99 982 | 22 |
| 5940 | 39 | 8.45 930 | 441 | 5.31 449 | 5.31 431 | 8.45 948 | 441 | 1.54 052 | 9.99 982 | 21 |
| 6000 | 40 | 8.46 366 | 436 | 5.31 449 | 5.31 430 | 8.46 385 | 437 | 1.53 615 | 9.99 982 | 20 |
| 6060 | 41 | 8.46 799 | 433 | 5.31 449 | 5.31 430 | 8.46 817 | 432 | 1.53 183 | 9.99 981 | 19 |
| 6120 | 42 | 8.47 226 | 427 | 5.31 449 | 5.31 430 | 8.47 245 | 428 | 1.52 755 | 9.99 981 | 18 |
| 6180 | 43 | 8.47 650 | 424 | 5.31 449 | 5.31 430 | 8.47 669 | 424 | 1.52 331 | 9.99 981 | 17 |
| 6240 | 44 | 8.48 069 | 419 | 5.31 449 | 5.31 429 | 8.48 089 | 420 | 1.51 911 | 9.99 980 | 16 |
| 6300 | 45 | 8.48 485 | 416 | 5.31 449 | 5.31 429 | 8.48 505 | 416 | 1.51 495 | 9.99 980 | 15 |
| 6360 | 46 | 8.48 896 | 411 | 5.31 449 | 5.31 429 | 8.48 917 | 412 | 1.51 083 | 9.99 979 | 14 |
| 6420 | 47 | 8.49 304 | 408 | 5.31 450 | 5.31 428 | 8.49 325 | 408 | 1.50 675 | 9.99 979 | 13 |
| 6480 | 48 | 8.49 708 | 404 | 5.31 450 | 5.31 428 | 8.49 729 | 404 | 1.50 271 | 9.99 979 | 12 |
| 6540 | 49 | 8.50 108 | 400 | 5.31 450 | 5.31 428 | 8.50 130 | 401 | 1.49 870 | 9.99 978 | 11 |
| 6600 | 50 | 8.50 504 | 396 | 5.31 450 | 5.31 428 | 8.50 527 | 397 | 1.49 473 | 9.99 978 | 10 |
| 6660 | 51 | 8.50 897 | 393 | 5.31 450 | 5.31 427 | 8.50 920 | 393 | 1.49 080 | 9.99 977 | 9 |
| 6720 | 52 | 8.51 287 | 390 | 5.31 450 | 5.31 427 | 8.51 310 | 390 | 1.48 690 | 9.99 977 | 8 |
| 6780 | 53 | 8.51 673 | 386 | 5.31 450 | 5.31 427 | 8.51 696 | 386 | 1.48 304 | 9.99 977 | 7 |
| 6840 | 54 | 8.52 055 | 382 | 5.31 450 | 5.31 427 | 8.52 079 | 382 | 1.47 921 | 9.99 976 | 6 |
| 6900 | 55 | 8.52 434 | 379 | 5.31 451 | 5.31 426 | 8.52 459 | 380 | 1.47 541 | 9.99 976 | 5 |
| 6960 | 56 | 8.52 810 | 376 | 5.31 451 | 5.31 426 | 8.52 835 | 376 | 1.47 165 | 9.99 975 | 4 |
| 7020 | 57 | 8.53 183 | 373 | 5.31 451 | 5.31 426 | 8.53 208 | 373 | 1.46 792 | 9.99 975 | 3 |
| 7080 | 58 | 8.53 552 | 369 | 5.31 451 | 5.31 425 | 8.53 578 | 370 | 1.46 422 | 9.99 974 | 2 |
| 7140 | 59 | 8.53 919 | 367 | 5.31 451 | 5.31 425 | 8.53 945 | 367 | 1.46 055 | 9.99 974 | 1 |
| 7200 | 60 | 8.54 282 | 363 | 5.31 451 | 5.31 425 | 8.54 308 | 363 | 1.45 692 | 9.99 974 | 0 |
| | | L Cos | d | | | L Cot | e d | L Tan | L Sin | |

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| | | L Sin | d | C S | C T | L Tan | c d | L Cot | L Cos | |
|-------|----|----------|-----|----------|----------|----------|-----|----------|----------|----|
| 7200 | 0 | 8.54 282 | 360 | 5.31 451 | 5.31 425 | 8.54 308 | 361 | 1.45 692 | 9.99 974 | 60 |
| 7200 | 1 | 8.54 642 | 357 | 5.31 451 | 5.31 425 | 8.54 609 | 358 | 1.45 331 | 9.99 973 | 59 |
| 7320 | 2 | 8.54 999 | 355 | 5.31 452 | 5.31 424 | 8.55 027 | 355 | 1.44 973 | 9.99 973 | 58 |
| 7320 | 3 | 8.55 354 | 351 | 5.31 452 | 5.31 424 | 8.55 382 | 352 | 1.44 618 | 9.99 972 | 57 |
| 7440 | 4 | 8.55 705 | 349 | 5.31 452 | 5.31 424 | 8.55 734 | 349 | 1.44 266 | 9.99 972 | 56 |
| 7500 | 5 | 8.56 054 | 346 | 5.31 452 | 5.31 423 | 8.56 083 | 346 | 1.43 917 | 9.99 971 | 55 |
| 7500 | 6 | 8.56 400 | 343 | 5.31 452 | 5.31 423 | 8.56 429 | 344 | 1.43 571 | 9.99 971 | 54 |
| 7620 | 7 | 8.56 743 | 341 | 5.31 452 | 5.31 423 | 8.56 773 | 341 | 1.43 227 | 9.99 970 | 53 |
| 7620 | 8 | 8.57 084 | 337 | 5.31 453 | 5.31 422 | 8.57 114 | 338 | 1.42 886 | 9.99 970 | 52 |
| 7740 | 9 | 8.57 421 | 336 | 5.31 453 | 5.31 422 | 8.57 452 | 336 | 1.42 548 | 9.99 969 | 51 |
| 7800 | 10 | 8.57 757 | 332 | 5.31 453 | 5.31 422 | 8.57 788 | 333 | 1.42 212 | 9.99 969 | 50 |
| 7800 | 11 | 8.58 089 | 330 | 5.31 453 | 5.31 421 | 8.58 121 | 330 | 1.41 879 | 9.99 968 | 49 |
| 7920 | 12 | 8.58 419 | 328 | 5.31 453 | 5.31 421 | 8.58 451 | 328 | 1.41 549 | 9.99 968 | 48 |
| 7920 | 13 | 8.58 747 | 325 | 5.31 453 | 5.31 421 | 8.58 779 | 326 | 1.41 221 | 9.99 967 | 47 |
| 8040 | 14 | 8.59 072 | 323 | 5.31 454 | 5.31 421 | 8.59 105 | 323 | 1.40 895 | 9.99 967 | 46 |
| 8100 | 15 | 8.59 395 | 320 | 5.31 454 | 5.31 420 | 8.59 428 | 321 | 1.40 572 | 9.99 967 | 45 |
| 8100 | 16 | 8.59 715 | 318 | 5.31 454 | 5.31 420 | 8.59 749 | 319 | 1.40 251 | 9.99 966 | 44 |
| 8220 | 17 | 8.60 033 | 316 | 5.31 454 | 5.31 420 | 8.60 068 | 316 | 1.39 932 | 9.99 966 | 43 |
| 8220 | 18 | 8.60 349 | 313 | 5.31 454 | 5.31 419 | 8.60 384 | 314 | 1.39 616 | 9.99 965 | 42 |
| 8340 | 19 | 8.60 662 | 311 | 5.31 454 | 5.31 419 | 8.60 698 | 311 | 1.39 302 | 9.99 964 | 41 |
| 8400 | 20 | 8.60 973 | 309 | 5.31 455 | 5.31 418 | 8.61 009 | 310 | 1.38 991 | 9.99 964 | 40 |
| 8400 | 21 | 8.61 282 | 307 | 5.31 455 | 5.31 418 | 8.61 319 | 307 | 1.38 681 | 9.99 963 | 39 |
| 8520 | 22 | 8.61 589 | 305 | 5.31 455 | 5.31 418 | 8.61 626 | 305 | 1.38 374 | 9.99 963 | 38 |
| 8520 | 23 | 8.61 894 | 302 | 5.31 455 | 5.31 417 | 8.61 931 | 303 | 1.38 069 | 9.99 962 | 37 |
| 8640 | 24 | 8.62 196 | 301 | 5.31 455 | 5.31 417 | 8.62 234 | 301 | 1.37 766 | 9.99 962 | 36 |
| 8700 | 25 | 8.62 497 | 298 | 5.31 455 | 5.31 417 | 8.62 535 | 299 | 1.37 465 | 9.99 961 | 35 |
| 8700 | 26 | 8.62 795 | 296 | 5.31 456 | 5.31 416 | 8.62 834 | 297 | 1.37 166 | 9.99 961 | 34 |
| 8820 | 27 | 8.63 091 | 294 | 5.31 456 | 5.31 416 | 8.63 131 | 295 | 1.36 869 | 9.99 960 | 33 |
| 8820 | 28 | 8.63 385 | 293 | 5.31 456 | 5.31 416 | 8.63 426 | 292 | 1.36 574 | 9.99 960 | 32 |
| 8940 | 29 | 8.63 678 | 290 | 5.31 456 | 5.31 415 | 8.63 718 | 291 | 1.36 282 | 9.99 959 | 31 |
| 9000 | 30 | 8.63 968 | 288 | 5.31 456 | 5.31 415 | 8.64 009 | 289 | 1.35 991 | 9.99 959 | 30 |
| 9000 | 31 | 8.64 256 | 287 | 5.31 456 | 5.31 415 | 8.64 298 | 287 | 1.35 702 | 9.99 958 | 29 |
| 9120 | 32 | 8.64 543 | 284 | 5.31 457 | 5.31 414 | 8.64 585 | 285 | 1.35 415 | 9.99 958 | 28 |
| 9120 | 33 | 8.64 827 | 283 | 5.31 457 | 5.31 414 | 8.64 870 | 284 | 1.35 130 | 9.99 957 | 27 |
| 9240 | 34 | 8.65 110 | 281 | 5.31 457 | 5.31 413 | 8.65 154 | 281 | 1.34 846 | 9.99 956 | 26 |
| 9300 | 35 | 8.65 391 | 279 | 5.31 457 | 5.31 413 | 8.65 435 | 280 | 1.34 565 | 9.99 956 | 25 |
| 9300 | 36 | 8.65 670 | 277 | 5.31 457 | 5.31 413 | 8.65 715 | 278 | 1.34 285 | 9.99 955 | 24 |
| 9420 | 37 | 8.65 947 | 276 | 5.31 458 | 5.31 412 | 8.65 993 | 276 | 1.34 007 | 9.99 955 | 23 |
| 9420 | 38 | 8.66 223 | 274 | 5.31 458 | 5.31 412 | 8.66 266 | 274 | 1.33 731 | 9.99 954 | 22 |
| 9540 | 39 | 8.66 497 | 272 | 5.31 458 | 5.31 412 | 8.66 543 | 273 | 1.33 457 | 9.99 954 | 21 |
| 9600 | 40 | 8.66 769 | 270 | 5.31 458 | 5.31 411 | 8.66 816 | 271 | 1.33 184 | 9.99 953 | 20 |
| 9600 | 41 | 8.67 039 | 269 | 5.31 458 | 5.31 411 | 8.67 087 | 269 | 1.32 913 | 9.99 952 | 19 |
| 9720 | 42 | 8.67 308 | 267 | 5.31 459 | 5.31 410 | 8.67 356 | 268 | 1.32 644 | 9.99 952 | 18 |
| 9720 | 43 | 8.67 575 | 266 | 5.31 459 | 5.31 410 | 8.67 624 | 266 | 1.32 376 | 9.99 951 | 17 |
| 9840 | 44 | 8.67 841 | 263 | 5.31 459 | 5.31 410 | 8.67 890 | 264 | 1.32 110 | 9.99 951 | 16 |
| 9900 | 45 | 8.68 104 | 263 | 5.31 459 | 5.31 409 | 8.68 154 | 263 | 1.31 846 | 9.99 950 | 15 |
| 9900 | 46 | 8.68 367 | 260 | 5.31 459 | 5.31 409 | 8.68 417 | 261 | 1.31 583 | 9.99 949 | 14 |
| 10020 | 47 | 8.68 627 | 259 | 5.31 460 | 5.31 408 | 8.68 678 | 260 | 1.31 322 | 9.99 949 | 13 |
| 10020 | 48 | 8.68 886 | 258 | 5.31 460 | 5.31 408 | 8.68 938 | 258 | 1.31 062 | 9.99 948 | 12 |
| 10140 | 49 | 8.69 144 | 256 | 5.31 460 | 5.31 408 | 8.69 196 | 257 | 1.30 804 | 9.99 948 | 11 |
| 10200 | 50 | 8.69 400 | 254 | 5.31 460 | 5.31 407 | 8.69 453 | 255 | 1.30 547 | 9.99 947 | 10 |
| 10260 | 51 | 8.69 654 | 253 | 5.31 460 | 5.31 407 | 8.69 708 | 254 | 1.30 292 | 9.99 946 | 9 |
| 10320 | 52 | 8.69 907 | 252 | 5.31 461 | 5.31 406 | 8.69 962 | 252 | 1.30 038 | 9.99 946 | 8 |
| 10380 | 53 | 8.70 159 | 250 | 5.31 461 | 5.31 406 | 8.70 214 | 251 | 1.29 786 | 9.99 945 | 7 |
| 10440 | 54 | 8.70 409 | 249 | 5.31 461 | 5.31 405 | 8.70 465 | 249 | 1.29 535 | 9.99 944 | 6 |
| 10500 | 55 | 8.70 658 | 247 | 5.31 461 | 5.31 405 | 8.70 714 | 248 | 1.29 286 | 9.99 944 | 5 |
| 10560 | 56 | 8.70 905 | 246 | 5.31 461 | 5.31 405 | 8.70 962 | 246 | 1.29 038 | 9.99 943 | 4 |
| 10620 | 57 | 8.71 151 | 244 | 5.31 462 | 5.31 404 | 8.71 208 | 245 | 1.28 792 | 9.99 942 | 3 |
| 10680 | 58 | 8.71 395 | 243 | 5.31 462 | 5.31 404 | 8.71 453 | 244 | 1.28 547 | 9.99 942 | 2 |
| 10740 | 59 | 8.71 638 | 242 | 5.31 462 | 5.31 403 | 8.71 697 | 243 | 1.28 303 | 9.99 941 | 1 |
| 10800 | 60 | 8.71 880 | | 5.31 462 | 5.31 403 | 8.71 940 | | 1.28 060 | 9.99 940 | 0 |
| | | L Cos | d | | | L Cot | c d | L Tan | L Sin | |

| | L Sin | d | L Tan | c d | L Cot | L Cos | | P P |
|----|----------|-----|----------|-----|----------|----------|----|----------------------------------|
| 0 | 8.71 880 | | 8.71 940 | | 1.28 060 | 9.99 940 | 60 | 241 239 237 235 234 |
| 1 | 8.72 120 | 240 | 8.72 181 | 241 | 1.27 819 | 9.99 940 | 59 | 1 4.0 4.0 4.0 3.9 3.8 |
| 2 | 8.72 359 | 239 | 8.72 420 | 239 | 1.27 580 | 9.99 939 | 58 | 2 8.0 8.0 7.9 7.8 7.8 |
| 3 | 8.72 597 | 238 | 8.72 659 | 237 | 1.27 341 | 9.99 938 | 57 | 3 12.0 12.0 11.8 11.8 11.7 |
| 4 | 8.72 834 | 237 | 8.72 896 | 236 | 1.27 104 | 9.99 937 | 56 | 4 16.1 15.9 15.8 15.7 15.6 |
| 5 | 8.73 069 | 236 | 8.73 132 | 235 | 1.26 868 | 9.99 936 | 55 | 5 20.1 19.9 19.8 19.6 19.5 |
| 6 | 8.73 303 | 235 | 8.73 366 | 234 | 1.26 634 | 9.99 935 | 54 | 6 24.1 23.9 23.7 23.5 23.4 |
| 7 | 8.73 535 | 234 | 8.73 600 | 233 | 1.26 400 | 9.99 934 | 53 | 7 28.1 27.9 27.6 27.4 27.1 |
| 8 | 8.73 767 | 233 | 8.73 832 | 232 | 1.26 168 | 9.99 933 | 52 | 8 32.1 31.9 31.6 31.3 31.2 |
| 9 | 8.73 997 | 232 | 8.74 063 | 231 | 1.25 937 | 9.99 932 | 51 | 9 36.2 35.8 35.6 35.2 35.1 |
| 10 | 8.74 226 | 231 | 8.74 292 | 230 | 1.25 708 | 9.99 931 | 50 | 10 40.2 39.8 39.5 39.2 39.0 |
| 11 | 8.74 454 | 230 | 8.74 521 | 229 | 1.25 479 | 9.99 930 | 49 | 20 80.3 79.7 79.0 78.3 78.0 |
| 12 | 8.74 680 | 229 | 8.74 748 | 228 | 1.25 252 | 9.99 929 | 48 | 30 120.5 119.5 118.5 117.5 117.0 |
| 13 | 8.74 906 | 228 | 8.74 974 | 227 | 1.25 026 | 9.99 928 | 47 | 40 160.7 159.3 158.0 156.5 156.0 |
| 14 | 8.75 130 | 227 | 8.75 199 | 226 | 1.24 801 | 9.99 927 | 46 | 50 200.8 199.2 197.5 195.8 195.0 |
| 15 | 8.75 353 | 226 | 8.75 423 | 225 | 1.24 577 | 9.99 926 | 45 | 1 232 229 227 225 223 |
| 16 | 8.75 575 | 225 | 8.75 645 | 224 | 1.24 355 | 9.99 925 | 44 | 2 3.7 3.7 3.6 3.6 3.6 |
| 17 | 8.75 795 | 224 | 8.75 867 | 223 | 1.24 133 | 9.99 924 | 43 | 3 7.7 7.6 7.6 7.5 7.4 |
| 18 | 8.76 015 | 223 | 8.76 087 | 222 | 1.23 913 | 9.99 923 | 42 | 4 11.6 11.4 11.4 11.2 11.2 |
| 19 | 8.76 234 | 222 | 8.76 306 | 221 | 1.23 694 | 9.99 922 | 41 | 5 15.5 15.3 15.1 15.0 14.9 |
| 20 | 8.76 451 | 221 | 8.76 525 | 220 | 1.23 475 | 9.99 921 | 40 | 6 19.3 19.1 18.9 18.8 18.6 |
| 21 | 8.76 667 | 220 | 8.76 742 | 219 | 1.23 252 | 9.99 920 | 39 | 7 23.2 22.9 22.7 22.5 22.3 |
| 22 | 8.76 883 | 219 | 8.76 958 | 218 | 1.23 032 | 9.99 919 | 38 | 8 27.1 26.7 26.5 26.2 26.0 |
| 23 | 8.77 097 | 218 | 8.77 173 | 217 | 1.22 827 | 9.99 918 | 37 | 9 30.9 30.5 30.3 30.0 29.7 |
| 24 | 8.77 310 | 217 | 8.77 387 | 216 | 1.22 613 | 9.99 917 | 36 | 10 34.8 34.4 34.0 33.8 33.4 |
| 25 | 8.77 522 | 216 | 8.77 600 | 215 | 1.22 400 | 9.99 916 | 35 | 11 38.7 38.2 37.8 37.5 37.2 |
| 26 | 8.77 733 | 215 | 8.77 811 | 214 | 1.22 189 | 9.99 915 | 34 | 20 77.3 76.3 75.7 75.0 74.3 |
| 27 | 8.77 943 | 214 | 8.78 022 | 213 | 1.21 978 | 9.99 914 | 33 | 30 116.0 114.5 113.5 112.5 111.5 |
| 28 | 8.78 152 | 213 | 8.78 232 | 212 | 1.21 768 | 9.99 913 | 32 | 40 154.7 152.7 151.3 150.0 148.7 |
| 29 | 8.78 360 | 212 | 8.78 441 | 211 | 1.21 559 | 9.99 912 | 31 | 50 193.3 190.8 189.2 187.5 185.8 |
| 30 | 8.78 568 | 211 | 8.78 649 | 210 | 1.21 351 | 9.99 911 | 30 | 222 220 217 215 213 |
| 31 | 8.78 774 | 210 | 8.78 855 | 209 | 1.21 143 | 9.99 910 | 29 | 1 3.7 3.7 3.6 3.6 3.6 |
| 32 | 8.78 979 | 209 | 8.79 061 | 208 | 1.20 930 | 9.99 909 | 28 | 2 7.4 7.3 7.2 7.2 7.1 |
| 33 | 8.79 183 | 208 | 8.79 266 | 207 | 1.20 734 | 9.99 908 | 27 | 3 11.1 11.0 10.8 10.8 10.6 |
| 34 | 8.79 386 | 207 | 8.79 470 | 206 | 1.20 530 | 9.99 907 | 26 | 4 14.8 14.7 14.5 14.3 14.2 |
| 35 | 8.79 588 | 206 | 8.79 673 | 205 | 1.20 327 | 9.99 906 | 25 | 5 18.5 18.3 18.1 17.9 17.8 |
| 36 | 8.79 789 | 205 | 8.79 875 | 204 | 1.20 125 | 9.99 905 | 24 | 6 22.2 22.0 21.7 21.5 21.3 |
| 37 | 8.79 990 | 204 | 8.80 076 | 203 | 1.19 924 | 9.99 904 | 23 | 7 25.9 25.7 25.3 25.1 24.8 |
| 38 | 8.80 189 | 203 | 8.80 277 | 202 | 1.19 723 | 9.99 903 | 22 | 8 29.6 29.3 28.9 28.7 28.4 |
| 39 | 8.80 388 | 202 | 8.80 476 | 201 | 1.19 524 | 9.99 902 | 21 | 9 33.3 33.0 32.6 32.2 32.0 |
| 40 | 8.80 585 | 201 | 8.80 674 | 200 | 1.19 326 | 9.99 901 | 20 | 10 37.0 36.7 36.2 35.8 35.5 |
| 41 | 8.80 782 | 200 | 8.80 872 | 199 | 1.19 128 | 9.99 900 | 19 | 20 74.0 73.3 72.3 71.7 71.0 |
| 42 | 8.80 978 | 199 | 8.81 068 | 198 | 1.18 932 | 9.99 900 | 18 | 30 111.0 110.0 108.5 107.5 106.5 |
| 43 | 8.81 173 | 198 | 8.81 264 | 197 | 1.18 736 | 9.99 900 | 17 | 40 148.0 146.7 144.7 143.3 142.0 |
| 44 | 8.81 367 | 197 | 8.81 459 | 196 | 1.18 541 | 9.99 900 | 16 | 50 185.0 183.3 180.8 179.2 177.5 |
| 45 | 8.81 560 | 196 | 8.81 653 | 195 | 1.18 347 | 9.99 900 | 15 | 211 208 206 203 201 |
| 46 | 8.81 752 | 195 | 8.81 846 | 194 | 1.18 154 | 9.99 900 | 14 | 1 3.5 3.5 3.4 3.4 3.4 |
| 47 | 8.81 944 | 194 | 8.82 038 | 193 | 1.17 962 | 9.99 900 | 13 | 2 7.0 6.9 6.8 6.8 6.7 |
| 48 | 8.82 134 | 193 | 8.82 230 | 192 | 1.17 770 | 9.99 900 | 12 | 3 10.6 10.4 10.3 10.2 10.0 |
| 49 | 8.82 324 | 192 | 8.82 420 | 191 | 1.17 580 | 9.99 900 | 11 | 4 14.1 13.9 13.7 13.5 13.4 |
| 50 | 8.82 513 | 191 | 8.82 610 | 190 | 1.17 390 | 9.99 900 | 10 | 5 17.6 17.4 17.2 16.9 16.8 |
| 51 | 8.82 701 | 190 | 8.82 799 | 189 | 1.17 201 | 9.99 900 | 9 | 6 21.1 20.8 20.6 20.3 20.1 |
| 52 | 8.82 888 | 189 | 8.82 987 | 188 | 1.17 013 | 9.99 900 | 8 | 7 24.6 24.3 24.0 23.7 23.4 |
| 53 | 8.83 075 | 188 | 8.83 175 | 187 | 1.16 825 | 9.99 900 | 7 | 8 28.1 27.7 27.5 27.1 26.8 |
| 54 | 8.83 261 | 187 | 8.83 361 | 186 | 1.16 639 | 9.99 900 | 6 | 9 31.6 31.2 30.9 30.4 30.2 |
| 55 | 8.83 446 | 186 | 8.83 547 | 185 | 1.16 453 | 9.99 900 | 5 | 10 35.2 34.7 34.3 33.8 33.5 |
| 56 | 8.83 630 | 185 | 8.83 732 | 184 | 1.16 268 | 9.99 900 | 4 | 20 70.3 69.3 68.7 67.7 67.0 |
| 57 | 8.83 813 | 184 | 8.83 916 | 183 | 1.16 084 | 9.99 900 | 3 | 30 105.5 104.0 103.0 101.5 100.5 |
| 58 | 8.83 996 | 183 | 8.84 100 | 182 | 1.15 900 | 9.99 900 | 2 | 40 140.7 138.7 137.3 135.3 134.0 |
| 59 | 8.84 177 | 182 | 8.84 282 | 181 | 1.15 718 | 9.99 900 | 1 | 50 175.8 173.3 171.7 169.2 167.5 |
| 60 | 8.84 358 | 181 | 8.84 464 | 180 | 1.15 536 | 9.99 900 | 0 | 190 187 185 183 181 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | | P P |

| | L Sin | d | L Tan | c d | L Cot | L Cos | | P | P |
|----|----------|-----|----------|-----|----------|----------|----|-----|-----|
| 0 | 8.84 358 | | 8.84 464 | | 1.15 536 | 9.99 894 | 60 | 182 | 181 |
| 1 | 8.84 530 | 181 | 8.84 646 | 182 | 1.15 534 | 9.99 893 | 59 | 179 | 178 |
| 2 | 8.84 718 | 179 | 8.84 826 | 180 | 1.15 532 | 9.99 892 | 58 | 177 | 176 |
| 3 | 8.84 897 | 177 | 8.85 006 | 180 | 1.14 994 | 9.99 891 | 57 | 175 | 174 |
| 4 | 8.85 075 | 178 | 8.85 185 | 179 | 1.14 815 | 9.99 891 | 56 | 173 | 172 |
| 5 | 8.85 252 | 177 | 8.85 363 | 178 | 1.14 637 | 9.99 890 | 55 | 171 | 170 |
| 6 | 8.85 429 | 177 | 8.85 540 | 177 | 1.14 460 | 9.99 889 | 54 | 169 | 168 |
| 7 | 8.85 605 | 176 | 8.85 717 | 177 | 1.14 283 | 9.99 888 | 53 | 167 | 166 |
| 8 | 8.85 780 | 175 | 8.85 893 | 176 | 1.14 107 | 9.99 887 | 52 | 165 | 164 |
| 9 | 8.85 955 | 175 | 8.86 069 | 176 | 1.13 931 | 9.99 886 | 51 | 163 | 162 |
| 10 | 8.86 128 | 173 | 8.86 243 | 174 | 1.13 757 | 9.99 885 | 50 | 161 | 160 |
| 11 | 8.86 301 | 173 | 8.86 417 | 174 | 1.13 583 | 9.99 884 | 49 | 159 | 158 |
| 12 | 8.86 474 | 173 | 8.86 591 | 174 | 1.13 409 | 9.99 883 | 48 | 157 | 156 |
| 13 | 8.86 645 | 171 | 8.86 763 | 172 | 1.13 237 | 9.99 882 | 47 | 155 | 154 |
| 14 | 8.86 816 | 171 | 8.86 935 | 171 | 1.13 065 | 9.99 881 | 46 | 153 | 152 |
| 15 | 8.86 987 | 169 | 8.87 106 | 171 | 1.12 894 | 9.99 880 | 45 | 151 | 150 |
| 16 | 8.87 156 | 169 | 8.87 277 | 170 | 1.12 723 | 9.99 879 | 44 | 149 | 148 |
| 17 | 8.87 325 | 169 | 8.87 447 | 169 | 1.12 553 | 9.99 879 | 43 | 147 | 146 |
| 18 | 8.87 494 | 167 | 8.87 616 | 169 | 1.12 384 | 9.99 878 | 42 | 145 | 144 |
| 19 | 8.87 661 | 167 | 8.87 785 | 168 | 1.12 215 | 9.99 877 | 41 | 143 | 142 |
| 20 | 8.87 829 | 166 | 8.87 953 | 167 | 1.12 047 | 9.99 876 | 40 | 141 | 140 |
| 21 | 8.87 995 | 166 | 8.88 120 | 167 | 1.11 880 | 9.99 875 | 39 | 139 | 138 |
| 22 | 8.88 161 | 165 | 8.88 287 | 166 | 1.11 713 | 9.99 874 | 38 | 137 | 136 |
| 23 | 8.88 326 | 164 | 8.88 453 | 165 | 1.11 547 | 9.99 873 | 37 | 135 | 134 |
| 24 | 8.88 490 | 164 | 8.88 618 | 165 | 1.11 382 | 9.99 872 | 36 | 133 | 132 |
| 25 | 8.88 654 | 163 | 8.88 783 | 165 | 1.11 217 | 9.99 871 | 35 | 131 | 130 |
| 26 | 8.88 817 | 163 | 8.88 948 | 163 | 1.11 052 | 9.99 870 | 34 | 129 | 128 |
| 27 | 8.88 980 | 162 | 8.89 111 | 163 | 1.10 889 | 9.99 869 | 33 | 127 | 126 |
| 28 | 8.89 142 | 162 | 8.89 274 | 163 | 1.10 726 | 9.99 868 | 32 | 125 | 124 |
| 29 | 8.89 304 | 160 | 8.89 437 | 161 | 1.10 563 | 9.99 867 | 31 | 123 | 122 |
| 30 | 8.89 464 | 161 | 8.89 598 | 162 | 1.10 402 | 9.99 866 | 30 | 121 | 120 |
| 31 | 8.89 625 | 159 | 8.89 760 | 160 | 1.10 240 | 9.99 865 | 29 | 119 | 118 |
| 32 | 8.89 784 | 159 | 8.89 920 | 160 | 1.10 080 | 9.99 864 | 28 | 117 | 116 |
| 33 | 8.89 943 | 159 | 8.90 080 | 160 | 1.09 920 | 9.99 863 | 27 | 115 | 114 |
| 34 | 8.90 102 | 158 | 8.90 240 | 159 | 1.09 760 | 9.99 862 | 26 | 113 | 112 |
| 35 | 8.90 260 | 157 | 8.90 399 | 158 | 1.09 601 | 9.99 861 | 25 | 111 | 110 |
| 36 | 8.90 417 | 157 | 8.90 557 | 158 | 1.09 443 | 9.99 860 | 24 | 109 | 108 |
| 37 | 8.90 574 | 156 | 8.90 715 | 157 | 1.09 285 | 9.99 859 | 23 | 107 | 106 |
| 38 | 8.90 730 | 155 | 8.90 872 | 157 | 1.09 128 | 9.99 858 | 22 | 105 | 104 |
| 39 | 8.90 885 | 155 | 8.91 029 | 156 | 1.08 971 | 9.99 857 | 21 | 103 | 102 |
| 40 | 8.91 040 | 155 | 8.91 185 | 155 | 1.08 815 | 9.99 856 | 20 | 101 | 100 |
| 41 | 8.91 195 | 154 | 8.91 340 | 155 | 1.08 660 | 9.99 855 | 19 | 99 | 98 |
| 42 | 8.91 349 | 153 | 8.91 495 | 155 | 1.08 505 | 9.99 854 | 18 | 97 | 96 |
| 43 | 8.91 502 | 153 | 8.91 650 | 153 | 1.08 350 | 9.99 853 | 17 | 95 | 94 |
| 44 | 8.91 655 | 152 | 8.91 803 | 154 | 1.08 197 | 9.99 852 | 16 | 93 | 92 |
| 45 | 8.91 807 | 152 | 8.91 957 | 153 | 1.08 043 | 9.99 851 | 15 | 91 | 90 |
| 46 | 8.91 959 | 151 | 8.92 110 | 152 | 1.07 890 | 9.99 850 | 14 | 89 | 88 |
| 47 | 8.92 110 | 151 | 8.92 262 | 152 | 1.07 738 | 9.99 848 | 13 | 87 | 86 |
| 48 | 8.92 261 | 150 | 8.92 414 | 151 | 1.07 586 | 9.99 847 | 12 | 85 | 84 |
| 49 | 8.92 411 | 150 | 8.92 565 | 151 | 1.07 435 | 9.99 846 | 11 | 83 | 82 |
| 50 | 8.92 561 | 149 | 8.92 716 | 150 | 1.07 284 | 9.99 845 | 10 | 81 | 80 |
| 51 | 8.92 710 | 149 | 8.92 866 | 150 | 1.07 134 | 9.99 844 | 9 | 79 | 78 |
| 52 | 8.92 859 | 148 | 8.93 016 | 149 | 1.06 984 | 9.99 843 | 8 | 77 | 76 |
| 53 | 8.93 007 | 147 | 8.93 165 | 148 | 1.06 835 | 9.99 842 | 7 | 75 | 74 |
| 54 | 8.93 154 | 147 | 8.93 313 | 149 | 1.06 687 | 9.99 841 | 6 | 73 | 72 |
| 55 | 8.93 301 | 147 | 8.93 462 | 147 | 1.06 538 | 9.99 840 | 5 | 71 | 70 |
| 56 | 8.93 448 | 146 | 8.93 609 | 147 | 1.06 391 | 9.99 839 | 4 | 69 | 68 |
| 57 | 8.93 594 | 146 | 8.93 756 | 147 | 1.06 244 | 9.99 838 | 3 | 67 | 66 |
| 58 | 8.93 740 | 145 | 8.93 903 | 146 | 1.06 097 | 9.99 837 | 2 | 65 | 64 |
| 59 | 8.93 885 | 145 | 8.94 049 | 146 | 1.05 951 | 9.99 836 | 1 | 63 | 62 |
| 60 | 8.94 030 | | 8.94 195 | | 1.05 805 | 9.99 834 | 0 | 61 | 60 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | | P | P |

5°

*95° 185° *275°

| | L Sin | d | L Tan | e d | L Cot | L Cos | | P P |
|----|----------|-----|----------|-----|----------|----------|----|----------------------------|
| 0 | 8.94 030 | | 8.94 195 | | 1.05 805 | 9.99 834 | 60 | 151 149 148 147 146 |
| 1 | 8.94 174 | 144 | 8.94 340 | 145 | 1.05 660 | 9.99 833 | 59 | 1 2.5 2.5 2.5 2.4 |
| 2 | 8.94 317 | 143 | 8.94 485 | 145 | 1.05 515 | 9.99 832 | 58 | 2 5.0 5.0 4.9 4.9 |
| 3 | 8.94 461 | 144 | 8.94 630 | 145 | 1.05 370 | 9.99 831 | 57 | 3 7.6 7.4 7.4 7.4 |
| 4 | 8.94 603 | 143 | 8.94 773 | 143 | 1.05 227 | 9.99 830 | 56 | 4 10.1 9.9 9.9 9.8 |
| 5 | 8.94 746 | 141 | 8.94 917 | 143 | 1.05 083 | 9.99 829 | 55 | 5 12.6 12.4 12.3 12.2 |
| 6 | 8.94 887 | 142 | 8.95 060 | 142 | 1.04 940 | 9.99 828 | 54 | 6 15.1 14.9 14.8 14.7 |
| 7 | 8.95 029 | 141 | 8.95 202 | 142 | 1.04 798 | 9.99 827 | 53 | 7 17.6 17.4 17.3 17.2 |
| 8 | 8.95 170 | 140 | 8.95 344 | 142 | 1.04 656 | 9.99 825 | 52 | 8 20.1 19.9 19.7 19.6 |
| 9 | 8.95 310 | 140 | 8.95 486 | 141 | 1.04 514 | 9.99 824 | 51 | 9 22.6 22.4 22.2 22.0 |
| 10 | 8.95 450 | 139 | 8.95 627 | 140 | 1.04 373 | 9.99 823 | 50 | 10 25.2 24.8 24.7 24.5 |
| 11 | 8.95 589 | 139 | 8.95 767 | 141 | 1.04 233 | 9.99 822 | 49 | 11 27.7 27.4 27.3 27.1 |
| 12 | 8.95 728 | 139 | 8.95 908 | 139 | 1.04 092 | 9.99 821 | 48 | 12 30.3 29.9 29.7 29.5 |
| 13 | 8.95 867 | 138 | 8.96 047 | 140 | 1.03 952 | 9.99 820 | 47 | 13 32.8 32.4 32.2 32.0 |
| 14 | 8.96 005 | 138 | 8.96 187 | 138 | 1.03 813 | 9.99 819 | 46 | 14 35.4 34.9 34.7 34.5 |
| 15 | 8.96 143 | 137 | 8.96 325 | 139 | 1.03 675 | 9.99 817 | 45 | 15 38.0 37.4 37.2 37.0 |
| 16 | 8.96 280 | 137 | 8.96 464 | 138 | 1.03 536 | 9.99 816 | 44 | 16 40.6 40.0 39.7 39.5 |
| 17 | 8.96 417 | 136 | 8.96 602 | 137 | 1.03 398 | 9.99 815 | 43 | 17 43.2 42.5 42.2 42.0 |
| 18 | 8.96 553 | 136 | 8.96 739 | 138 | 1.03 261 | 9.99 814 | 42 | 18 45.8 45.0 44.7 44.5 |
| 19 | 8.96 689 | 136 | 8.96 877 | 136 | 1.03 123 | 9.99 813 | 41 | 19 48.4 47.5 47.2 47.0 |
| 20 | 8.96 825 | 135 | 8.97 013 | 137 | 1.02 987 | 9.99 812 | 40 | 20 51.0 50.0 49.7 49.5 |
| 21 | 8.96 960 | 135 | 8.97 150 | 135 | 1.02 850 | 9.99 810 | 39 | 21 53.6 52.5 52.2 52.0 |
| 22 | 8.97 095 | 134 | 8.97 285 | 136 | 1.02 715 | 9.99 809 | 38 | 22 56.2 55.0 54.7 54.5 |
| 23 | 8.97 229 | 134 | 8.97 421 | 135 | 1.02 579 | 9.99 808 | 37 | 23 58.8 57.5 57.2 57.0 |
| 24 | 8.97 363 | 133 | 8.97 556 | 135 | 1.02 444 | 9.99 807 | 36 | 24 61.4 60.0 59.7 59.5 |
| 25 | 8.97 496 | 133 | 8.97 691 | 134 | 1.02 309 | 9.99 806 | 35 | 25 64.0 62.5 62.2 62.0 |
| 26 | 8.97 629 | 133 | 8.97 825 | 134 | 1.02 175 | 9.99 804 | 34 | 26 66.6 65.0 64.7 64.5 |
| 27 | 8.97 762 | 132 | 8.97 959 | 133 | 1.02 041 | 9.99 803 | 33 | 27 69.2 67.5 67.2 67.0 |
| 28 | 8.97 894 | 132 | 8.98 092 | 133 | 1.01 908 | 9.99 802 | 32 | 28 71.8 70.0 69.7 69.5 |
| 29 | 8.98 026 | 131 | 8.98 225 | 133 | 1.01 775 | 9.99 801 | 31 | 29 74.4 72.5 72.2 72.0 |
| 30 | 8.98 157 | 131 | 8.98 358 | 132 | 1.01 642 | 9.99 800 | 30 | 30 77.0 75.0 74.7 74.5 |
| 31 | 8.98 288 | 131 | 8.98 490 | 132 | 1.01 510 | 9.99 798 | 29 | 31 79.6 77.5 77.2 77.0 |
| 32 | 8.98 419 | 130 | 8.98 622 | 131 | 1.01 378 | 9.99 797 | 28 | 32 82.2 80.0 79.7 79.5 |
| 33 | 8.98 549 | 130 | 8.98 753 | 131 | 1.01 247 | 9.99 796 | 27 | 33 84.8 82.5 82.2 82.0 |
| 34 | 8.98 679 | 129 | 8.98 884 | 131 | 1.01 116 | 9.99 795 | 26 | 34 87.4 85.0 84.7 84.5 |
| 35 | 8.98 808 | 129 | 8.99 015 | 130 | 1.00 985 | 9.99 793 | 25 | 35 90.0 87.5 87.2 87.0 |
| 36 | 8.98 937 | 129 | 8.99 145 | 130 | 1.00 855 | 9.99 792 | 24 | 36 92.6 90.0 89.7 89.5 |
| 37 | 8.99 066 | 128 | 8.99 275 | 130 | 1.00 725 | 9.99 791 | 23 | 37 95.2 92.5 92.2 92.0 |
| 38 | 8.99 194 | 128 | 8.99 405 | 129 | 1.00 595 | 9.99 790 | 22 | 38 97.8 95.0 94.7 94.5 |
| 39 | 8.99 322 | 128 | 8.99 534 | 128 | 1.00 466 | 9.99 788 | 21 | 39 100.4 97.5 97.2 97.0 |
| 40 | 8.99 450 | 127 | 8.99 662 | 129 | 1.00 338 | 9.99 787 | 20 | 40 103.0 100.0 99.7 99.5 |
| 41 | 8.99 577 | 127 | 8.99 791 | 128 | 1.00 209 | 9.99 786 | 19 | 41 105.6 102.5 102.2 102.0 |
| 42 | 8.99 704 | 126 | 8.99 919 | 127 | 1.00 081 | 9.99 785 | 18 | 42 108.2 105.0 104.7 104.5 |
| 43 | 8.99 830 | 126 | 9.00 046 | 128 | 9.99 954 | 9.99 783 | 17 | 43 110.8 107.5 107.2 107.0 |
| 44 | 8.99 956 | 126 | 9.00 174 | 127 | 9.99 826 | 9.99 782 | 16 | 44 113.4 110.0 109.7 109.5 |
| 45 | 9.00 082 | 125 | 9.00 301 | 126 | 9.99 699 | 9.99 781 | 15 | 45 116.0 112.5 112.2 112.0 |
| 46 | 9.00 207 | 125 | 9.00 427 | 126 | 9.99 573 | 9.99 780 | 14 | 46 118.6 115.0 114.7 114.5 |
| 47 | 9.00 332 | 124 | 9.00 553 | 126 | 9.99 447 | 9.99 778 | 13 | 47 121.2 117.5 117.2 117.0 |
| 48 | 9.00 456 | 125 | 9.00 679 | 126 | 9.99 321 | 9.99 777 | 12 | 48 123.8 120.0 119.7 119.5 |
| 49 | 9.00 581 | 123 | 9.00 805 | 125 | 9.99 195 | 9.99 776 | 11 | 49 126.4 122.5 122.2 122.0 |
| 50 | 9.00 704 | 124 | 9.00 930 | 125 | 9.99 070 | 9.99 775 | 10 | 50 129.0 125.0 124.7 124.5 |
| 51 | 9.00 828 | 123 | 9.01 055 | 124 | 9.98 945 | 9.99 773 | 9 | 1 125 124 123 122 |
| 52 | 9.00 951 | 123 | 9.01 179 | 124 | 9.98 821 | 9.99 772 | 8 | 2 2.1 2.1 2.0 2.0 |
| 53 | 9.01 074 | 122 | 9.01 303 | 124 | 9.98 697 | 9.99 771 | 7 | 3 4.7 4.7 4.6 4.6 |
| 54 | 9.01 196 | 122 | 9.01 427 | 123 | 9.98 573 | 9.99 769 | 6 | 4 7.3 7.3 7.2 7.2 |
| 55 | 9.01 318 | 122 | 9.01 550 | 123 | 9.98 450 | 9.99 768 | 5 | 5 10.0 10.0 9.9 9.9 |
| 56 | 9.01 440 | 121 | 9.01 673 | 123 | 9.98 327 | 9.99 767 | 4 | 6 12.6 12.6 12.5 12.5 |
| 57 | 9.01 561 | 121 | 9.01 796 | 122 | 9.98 204 | 9.99 765 | 3 | 7 15.2 15.2 15.1 15.1 |
| 58 | 9.01 682 | 121 | 9.01 918 | 122 | 9.98 082 | 9.99 764 | 2 | 8 17.8 17.8 17.7 17.7 |
| 59 | 9.01 803 | 120 | 9.02 040 | 122 | 9.97 960 | 9.99 763 | 1 | 9 20.4 20.4 20.3 20.3 |
| 60 | 9.01 923 | | 9.02 162 | | 9.97 838 | 9.99 761 | 0 | 10 23.0 23.0 22.9 22.9 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | | P P |

*174° 264° *351°

84°

| | L Sin | d | L Tan | e d | L Cot | L Cos | | P P | | | |
|----|----------|-----|----------|-----|----------|----------|----|-----|-------|-------|------|
| 0 | 9.01 923 | | 9.02 162 | | 0.97 838 | 9.99 761 | 60 | | | | |
| 1 | 9.02 043 | 120 | 9.02 283 | 121 | 0.97 717 | 9.99 760 | 59 | 121 | 120 | 119 | 118 |
| 2 | 9.02 163 | 120 | 9.02 404 | 121 | 0.97 596 | 9.99 759 | 58 | 1 | 2.0 | 2.0 | 2.0 |
| 3 | 9.02 283 | 119 | 9.02 525 | 120 | 0.97 475 | 9.99 757 | 57 | 2 | 4.0 | 4.0 | 4.0 |
| 4 | 9.02 402 | 118 | 9.02 645 | 121 | 0.97 355 | 9.99 756 | 56 | 3 | 6.0 | 6.0 | 6.0 |
| 5 | 9.02 520 | 119 | 9.02 766 | 119 | 0.97 234 | 9.99 755 | 55 | 4 | 8.1 | 8.0 | 7.9 |
| 6 | 9.02 639 | 118 | 9.02 885 | 120 | 0.97 115 | 9.99 753 | 54 | 5 | 10.1 | 10.0 | 9.9 |
| 7 | 9.02 757 | 117 | 9.03 005 | 119 | 0.96 995 | 9.99 752 | 53 | 6 | 12.1 | 12.0 | 11.9 |
| 8 | 9.02 874 | 118 | 9.03 124 | 118 | 0.96 876 | 9.99 751 | 52 | 7 | 14.1 | 14.0 | 13.9 |
| 9 | 9.02 992 | 117 | 9.03 242 | 119 | 0.96 758 | 9.99 749 | 51 | 8 | 16.1 | 16.0 | 15.9 |
| 10 | 9.03 109 | 117 | 9.03 361 | 118 | 0.96 639 | 9.99 748 | 50 | 9 | 18.2 | 18.0 | 17.8 |
| 11 | 9.03 226 | 116 | 9.03 479 | 118 | 0.96 521 | 9.99 747 | 49 | 10 | 20.2 | 20.0 | 19.8 |
| 12 | 9.03 342 | 116 | 9.03 597 | 117 | 0.96 403 | 9.99 745 | 48 | 20 | 40.3 | 40.0 | 39.7 |
| 13 | 9.03 458 | 116 | 9.03 714 | 118 | 0.96 286 | 9.99 744 | 47 | 30 | 60.5 | 60.0 | 59.5 |
| 14 | 9.03 574 | 116 | 9.03 832 | 116 | 0.96 168 | 9.99 742 | 46 | 40 | 80.7 | 80.0 | 79.3 |
| 15 | 9.03 690 | 115 | 9.03 948 | 117 | 0.96 052 | 9.99 741 | 45 | 50 | 100.8 | 100.0 | 99.2 |
| 16 | 9.03 805 | 115 | 9.04 065 | 116 | 0.95 935 | 9.99 740 | 44 | | | | |
| 17 | 9.03 920 | 114 | 9.04 181 | 116 | 0.95 819 | 9.99 738 | 43 | 117 | 116 | 115 | 114 |
| 18 | 9.04 034 | 115 | 9.04 297 | 116 | 0.95 703 | 9.99 737 | 42 | 1 | 2.0 | 1.9 | 1.9 |
| 19 | 9.04 149 | 113 | 9.04 413 | 115 | 0.95 587 | 9.99 736 | 41 | 2 | 3.9 | 3.9 | 3.8 |
| 20 | 9.04 262 | 114 | 9.04 528 | 115 | 0.95 472 | 9.99 734 | 40 | 3 | 5.8 | 5.8 | 5.8 |
| 21 | 9.04 376 | 114 | 9.04 643 | 115 | 0.95 357 | 9.99 733 | 39 | 4 | 7.8 | 7.7 | 7.7 |
| 22 | 9.04 490 | 113 | 9.04 758 | 115 | 0.95 242 | 9.99 731 | 38 | 5 | 9.8 | 9.7 | 9.6 |
| 23 | 9.04 603 | 112 | 9.04 873 | 114 | 0.95 127 | 9.99 730 | 37 | 6 | 11.7 | 11.6 | 11.5 |
| 24 | 9.04 715 | 113 | 9.04 987 | 114 | 0.95 013 | 9.99 728 | 36 | 7 | 13.6 | 13.5 | 13.4 |
| 25 | 9.04 828 | 112 | 9.05 101 | 113 | 0.94 899 | 9.99 727 | 35 | 8 | 15.6 | 15.5 | 15.3 |
| 26 | 9.04 940 | 112 | 9.05 214 | 114 | 0.94 786 | 9.99 726 | 34 | 9 | 17.6 | 17.4 | 17.2 |
| 27 | 9.05 052 | 112 | 9.05 328 | 113 | 0.94 672 | 9.99 724 | 33 | 10 | 19.5 | 19.3 | 19.2 |
| 28 | 9.05 164 | 111 | 9.05 441 | 112 | 0.94 559 | 9.99 723 | 32 | 20 | 39.0 | 38.7 | 38.3 |
| 29 | 9.05 275 | 111 | 9.05 553 | 113 | 0.94 447 | 9.99 721 | 31 | 30 | 58.5 | 58.0 | 57.5 |
| 30 | 9.05 386 | 111 | 9.05 666 | 112 | 0.94 334 | 9.99 720 | 30 | 40 | 78.0 | 77.3 | 76.7 |
| 31 | 9.05 497 | 110 | 9.05 778 | 112 | 0.94 222 | 9.99 718 | 29 | 50 | 97.5 | 96.7 | 95.8 |
| 32 | 9.05 607 | 110 | 9.05 890 | 112 | 0.94 110 | 9.99 717 | 28 | | | | |
| 33 | 9.05 717 | 110 | 9.06 002 | 111 | 0.93 998 | 9.99 716 | 27 | 113 | 112 | 111 | 110 |
| 34 | 9.05 827 | 110 | 9.06 113 | 111 | 0.93 887 | 9.99 714 | 26 | 1 | 1.9 | 1.9 | 1.8 |
| 35 | 9.05 937 | 109 | 9.06 224 | 111 | 0.93 776 | 9.99 713 | 25 | 2 | 3.8 | 3.7 | 3.7 |
| 36 | 9.06 046 | 109 | 9.06 335 | 110 | 0.93 665 | 9.99 711 | 24 | 3 | 5.6 | 5.6 | 5.6 |
| 37 | 9.06 155 | 109 | 9.06 445 | 111 | 0.93 555 | 9.99 710 | 23 | 4 | 7.5 | 7.5 | 7.4 |
| 38 | 9.06 264 | 108 | 9.06 556 | 110 | 0.93 444 | 9.99 708 | 22 | 5 | 9.4 | 9.3 | 9.2 |
| 39 | 9.06 372 | 109 | 9.06 666 | 109 | 0.93 334 | 9.99 707 | 21 | 6 | 11.3 | 11.2 | 11.1 |
| 40 | 9.06 481 | 108 | 9.06 775 | 110 | 0.93 225 | 9.99 705 | 20 | 7 | 13.2 | 13.1 | 13.0 |
| 41 | 9.06 589 | 107 | 9.06 885 | 109 | 0.93 115 | 9.99 704 | 19 | 8 | 15.1 | 14.9 | 14.8 |
| 42 | 9.06 696 | 108 | 9.06 994 | 109 | 0.93 006 | 9.99 702 | 18 | 9 | 17.0 | 16.8 | 16.6 |
| 43 | 9.06 804 | 107 | 9.07 103 | 108 | 0.92 897 | 9.99 701 | 17 | 10 | 18.8 | 18.7 | 18.5 |
| 44 | 9.06 911 | 107 | 9.07 211 | 109 | 0.92 789 | 9.99 699 | 16 | 20 | 37.7 | 37.3 | 37.0 |
| 45 | 9.07 018 | 106 | 9.07 320 | 108 | 0.92 680 | 9.99 698 | 15 | 30 | 56.5 | 56.0 | 55.5 |
| 46 | 9.07 124 | 107 | 9.07 428 | 108 | 0.92 572 | 9.99 696 | 14 | 40 | 75.3 | 74.7 | 74.0 |
| 47 | 9.07 231 | 106 | 9.07 536 | 107 | 0.92 464 | 9.99 695 | 13 | 50 | 94.2 | 93.3 | 92.5 |
| 48 | 9.07 337 | 105 | 9.07 643 | 108 | 0.92 357 | 9.99 693 | 12 | | | | |
| 49 | 9.07 442 | 106 | 9.07 751 | 107 | 0.92 249 | 9.99 692 | 11 | 109 | 108 | 107 | 106 |
| 50 | 9.07 548 | 105 | 9.07 858 | 106 | 0.92 142 | 9.99 690 | 10 | 1 | 1.8 | 1.8 | 1.8 |
| 51 | 9.07 653 | 105 | 9.07 964 | 107 | 0.92 036 | 9.99 689 | 9 | 2 | 3.6 | 3.6 | 3.6 |
| 52 | 9.07 758 | 105 | 9.08 071 | 106 | 0.91 929 | 9.99 687 | 8 | 3 | 5.4 | 5.4 | 5.4 |
| 53 | 9.07 863 | 105 | 9.08 177 | 106 | 0.91 823 | 9.99 686 | 7 | 4 | 7.3 | 7.2 | 7.1 |
| 54 | 9.07 968 | 104 | 9.08 283 | 106 | 0.91 717 | 9.99 684 | 6 | 5 | 9.1 | 9.0 | 8.9 |
| 55 | 9.08 072 | 104 | 9.08 389 | 106 | 0.91 611 | 9.99 683 | 5 | 6 | 10.9 | 10.8 | 10.7 |
| 56 | 9.08 176 | 104 | 9.08 495 | 105 | 0.91 505 | 9.99 681 | 4 | 7 | 12.7 | 12.6 | 12.5 |
| 57 | 9.08 280 | 103 | 9.08 600 | 105 | 0.91 400 | 9.99 680 | 3 | 8 | 14.5 | 14.4 | 14.3 |
| 58 | 9.08 383 | 103 | 9.08 705 | 105 | 0.91 295 | 9.99 678 | 2 | 9 | 16.4 | 16.2 | 16.0 |
| 59 | 9.08 486 | 103 | 9.08 810 | 104 | 0.91 190 | 9.99 677 | 1 | 10 | 18.2 | 18.0 | 17.8 |
| 60 | 9.08 589 | | 9.08 914 | | 0.91 086 | 9.99 675 | 0 | 20 | 36.3 | 36.0 | 35.7 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | | 30 | 54.5 | 54.0 | 53.5 |
| | | | | | | | | 40 | 72.7 | 72.0 | 71.3 |
| | | | | | | | | 50 | 90.8 | 90.0 | 89.2 |

| | L Sin | d | L Tan | c d | L Cot | L Cos | | P P | | | | |
|----|----------|-----|----------|-----|----------|----------|----|-----|------|------|------|------|
| 0 | 9.08 589 | | 9.08 914 | | 0.91 086 | 9.99 675 | 60 | | | | | |
| 1 | 9.08 692 | 103 | 9.09 019 | 105 | 0.90 981 | 9.99 674 | 59 | 105 | 104 | 103 | 102 | |
| 2 | 9.08 795 | 103 | 9.09 123 | 104 | 0.90 877 | 9.99 672 | 58 | 2 | 3.5 | 3.5 | 3.4 | 1.7 |
| 3 | 9.08 897 | 102 | 9.09 227 | 104 | 0.90 773 | 9.99 670 | 57 | 3 | 5.2 | 5.2 | 5.2 | 3.4 |
| 4 | 9.08 999 | 102 | 9.09 330 | 103 | 0.90 670 | 9.99 669 | 56 | 4 | 7.0 | 6.9 | 6.9 | 5.1 |
| 5 | 9.09 101 | 101 | 9.09 434 | 104 | 0.90 566 | 9.99 667 | 55 | 5 | 8.8 | 8.7 | 8.6 | 6.8 |
| 6 | 9.09 202 | 102 | 9.09 537 | 103 | 0.90 463 | 9.99 666 | 54 | 6 | 10.5 | 10.4 | 10.3 | 8.5 |
| 7 | 9.09 304 | 101 | 9.09 640 | 103 | 0.90 360 | 9.99 664 | 53 | 7 | 12.2 | 12.1 | 12.0 | 10.2 |
| 8 | 9.09 405 | 101 | 9.09 742 | 102 | 0.90 258 | 9.99 663 | 52 | 8 | 14.0 | 13.9 | 13.7 | 11.9 |
| 9 | 9.09 506 | 100 | 9.09 845 | 103 | 0.90 155 | 9.99 661 | 51 | 9 | 15.8 | 15.6 | 15.4 | 13.6 |
| 10 | 9.09 606 | 101 | 9.09 947 | 102 | 0.90 053 | 9.99 659 | 50 | 10 | 17.5 | 17.3 | 17.2 | 15.3 |
| 11 | 9.09 707 | 100 | 9.10 049 | 102 | 0.89 951 | 9.99 658 | 49 | 20 | 35.0 | 34.7 | 34.3 | 17.0 |
| 12 | 9.09 807 | 100 | 9.10 150 | 101 | 0.89 850 | 9.99 656 | 48 | 30 | 52.5 | 52.0 | 51.5 | 34.0 |
| 13 | 9.09 907 | 99 | 9.10 252 | 102 | 0.89 748 | 9.99 655 | 47 | 40 | 70.0 | 69.3 | 68.7 | 51.0 |
| 14 | 9.10 006 | 100 | 9.10 353 | 101 | 0.89 647 | 9.99 653 | 46 | 50 | 87.5 | 86.7 | 85.8 | 68.0 |
| 15 | 9.10 106 | 99 | 9.10 454 | 101 | 0.89 546 | 9.99 651 | 45 | | | | | |
| 16 | 9.10 205 | 99 | 9.10 555 | 101 | 0.89 445 | 9.99 650 | 44 | 101 | 100 | 99 | 98 | |
| 17 | 9.10 304 | 98 | 9.10 656 | 100 | 0.89 344 | 9.99 648 | 43 | 1 | 1.7 | 1.7 | 1.6 | 1.6 |
| 18 | 9.10 402 | 99 | 9.10 756 | 100 | 0.89 244 | 9.99 647 | 42 | 2 | 3.4 | 3.3 | 3.3 | 1.7 |
| 19 | 9.10 501 | 98 | 9.10 856 | 100 | 0.89 144 | 9.99 645 | 41 | 3 | 5.0 | 5.0 | 5.0 | 3.4 |
| 20 | 9.10 599 | 98 | 9.10 956 | 100 | 0.89 044 | 9.99 643 | 40 | 4 | 6.7 | 6.7 | 6.6 | 5.1 |
| 21 | 9.10 697 | 98 | 9.11 056 | 99 | 0.88 944 | 9.99 642 | 39 | 5 | 8.4 | 8.3 | 8.2 | 6.8 |
| 22 | 9.10 795 | 98 | 9.11 155 | 99 | 0.88 845 | 9.99 640 | 38 | 6 | 10.1 | 10.0 | 9.9 | 8.5 |
| 23 | 9.10 893 | 97 | 9.11 254 | 99 | 0.88 746 | 9.99 638 | 37 | 7 | 11.8 | 11.7 | 11.6 | 10.2 |
| 24 | 9.10 990 | 97 | 9.11 353 | 99 | 0.88 647 | 9.99 637 | 36 | 8 | 13.5 | 13.3 | 13.2 | 11.9 |
| 25 | 9.11 087 | 97 | 9.11 452 | 99 | 0.88 548 | 9.99 635 | 35 | 9 | 15.2 | 15.0 | 14.8 | 13.6 |
| 26 | 9.11 184 | 97 | 9.11 551 | 98 | 0.88 449 | 9.99 633 | 34 | 10 | 16.8 | 16.7 | 16.5 | 15.3 |
| 27 | 9.11 281 | 96 | 9.11 649 | 98 | 0.88 351 | 9.99 632 | 33 | 20 | 33.7 | 33.3 | 33.0 | 32.7 |
| 28 | 9.11 377 | 97 | 9.11 747 | 98 | 0.88 253 | 9.99 630 | 32 | 30 | 50.5 | 50.0 | 49.5 | 49.0 |
| 29 | 9.11 474 | 96 | 9.11 845 | 98 | 0.88 155 | 9.99 629 | 31 | 40 | 67.3 | 66.7 | 66.0 | 65.3 |
| 30 | 9.11 570 | 96 | 9.11 943 | 97 | 0.88 057 | 9.99 627 | 30 | 50 | 84.2 | 83.3 | 82.5 | 81.7 |
| 31 | 9.11 666 | 95 | 9.12 040 | 97 | 0.87 960 | 9.99 625 | 29 | | | | | |
| 32 | 9.11 761 | 96 | 9.12 138 | 98 | 0.87 862 | 9.99 624 | 28 | 97 | 96 | 95 | 94 | |
| 33 | 9.11 857 | 95 | 9.12 235 | 97 | 0.87 765 | 9.99 622 | 27 | 1 | 1.6 | 1.6 | 1.6 | 1.6 |
| 34 | 9.11 952 | 95 | 9.12 332 | 97 | 0.87 668 | 9.99 620 | 26 | 2 | 3.2 | 3.2 | 3.2 | 3.1 |
| 35 | 9.12 047 | 95 | 9.12 428 | 96 | 0.87 572 | 9.99 618 | 25 | 3 | 4.8 | 4.8 | 4.8 | 4.7 |
| 36 | 9.12 142 | 94 | 9.12 525 | 97 | 0.87 475 | 9.99 617 | 24 | 4 | 6.5 | 6.4 | 6.3 | 6.3 |
| 37 | 9.12 236 | 95 | 9.12 621 | 96 | 0.87 379 | 9.99 615 | 23 | 5 | 8.1 | 8.0 | 7.9 | 7.8 |
| 38 | 9.12 331 | 94 | 9.12 717 | 96 | 0.87 283 | 9.99 613 | 22 | 6 | 9.7 | 9.6 | 9.5 | 9.4 |
| 39 | 9.12 425 | 94 | 9.12 813 | 96 | 0.87 187 | 9.99 612 | 21 | 7 | 11.3 | 11.2 | 11.1 | 11.0 |
| 40 | 9.12 519 | 93 | 9.12 909 | 96 | 0.87 091 | 9.99 610 | 20 | 8 | 12.9 | 12.8 | 12.7 | 12.5 |
| 41 | 9.12 612 | 93 | 9.13 004 | 95 | 0.86 996 | 9.99 608 | 19 | 9 | 14.6 | 14.4 | 14.2 | 14.1 |
| 42 | 9.12 706 | 94 | 9.13 099 | 95 | 0.86 901 | 9.99 607 | 18 | 10 | 16.2 | 16.0 | 15.8 | 15.7 |
| 43 | 9.12 799 | 93 | 9.13 194 | 95 | 0.86 806 | 9.99 605 | 17 | 20 | 32.3 | 32.0 | 31.7 | 31.3 |
| 44 | 9.12 892 | 93 | 9.13 289 | 95 | 0.86 711 | 9.99 603 | 16 | 30 | 48.5 | 48.0 | 47.5 | 47.0 |
| 45 | 9.12 985 | 93 | 9.13 384 | 95 | 0.86 616 | 9.99 601 | 15 | 40 | 64.7 | 64.0 | 63.3 | 62.7 |
| 46 | 9.13 078 | 93 | 9.13 478 | 94 | 0.86 522 | 9.99 600 | 14 | 50 | 80.8 | 80.0 | 79.2 | 78.3 |
| 47 | 9.13 171 | 92 | 9.13 573 | 95 | 0.86 427 | 9.99 598 | 13 | | | | | |
| 48 | 9.13 263 | 92 | 9.13 667 | 94 | 0.86 333 | 9.99 596 | 12 | 93 | 92 | 91 | 90 | |
| 49 | 9.13 355 | 92 | 9.13 761 | 94 | 0.86 239 | 9.99 595 | 11 | 1 | 1.6 | 1.5 | 1.5 | 1.5 |
| 50 | 9.13 447 | 92 | 9.13 854 | 93 | 0.86 146 | 9.99 593 | 10 | 2 | 3.1 | 3.1 | 3.0 | 3.0 |
| 51 | 9.13 539 | 91 | 9.13 948 | 93 | 0.86 052 | 9.99 591 | 9 | 3 | 4.6 | 4.6 | 4.6 | 4.5 |
| 52 | 9.13 630 | 91 | 9.14 041 | 93 | 0.85 959 | 9.99 589 | 8 | 4 | 6.2 | 6.1 | 6.1 | 6.0 |
| 53 | 9.13 722 | 91 | 9.14 134 | 93 | 0.85 866 | 9.99 588 | 7 | 5 | 7.8 | 7.7 | 7.6 | 7.5 |
| 54 | 9.13 813 | 91 | 9.14 227 | 93 | 0.85 773 | 9.99 586 | 6 | 6 | 9.3 | 9.2 | 9.1 | 9.0 |
| 55 | 9.13 904 | 90 | 9.14 320 | 92 | 0.85 680 | 9.99 584 | 5 | 7 | 10.8 | 10.7 | 10.6 | 10.5 |
| 56 | 9.13 994 | 91 | 9.14 412 | 92 | 0.85 588 | 9.99 582 | 4 | 8 | 12.4 | 12.3 | 12.1 | 12.0 |
| 57 | 9.14 085 | 91 | 9.14 504 | 92 | 0.85 496 | 9.99 581 | 3 | 9 | 14.0 | 13.8 | 13.6 | 13.5 |
| 58 | 9.14 175 | 90 | 9.14 597 | 91 | 0.85 403 | 9.99 579 | 2 | 10 | 15.5 | 15.3 | 15.2 | 15.0 |
| 59 | 9.14 266 | 91 | 9.14 688 | 91 | 0.85 312 | 9.99 577 | 1 | 20 | 31.0 | 30.7 | 30.3 | 30.0 |
| 60 | 9.14 356 | 90 | 9.14 780 | 92 | 0.85 220 | 9.99 575 | 0 | 30 | 46.5 | 46.0 | 45.5 | 45.0 |
| | | | | | | | | 40 | 61.3 | 60.7 | 60.0 | 60.0 |
| | | | | | | | | 50 | 77.5 | 76.7 | 75.8 | 75.0 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | | P P | | | | |

| | L Sin | d | L Tan | e d | L Cot | L Cos | | P P |
|----|----------|----|----------|-----|----------|----------|----|-------------------|
| 0 | 0.14 350 | | 0.14 780 | | 0.85 220 | 0.99 575 | 60 | 92 91 90 |
| 1 | 0.14 445 | 89 | 0.14 872 | 92 | 0.85 128 | 0.99 574 | 59 | 1 1.5 1.5 1.5 |
| 2 | 0.14 535 | 90 | 0.14 963 | 91 | 0.85 037 | 0.99 572 | 58 | 2 3.1 3.0 3.0 |
| 3 | 0.14 624 | 89 | 0.15 054 | 91 | 0.84 946 | 0.99 570 | 57 | 3 4.6 4.6 4.5 |
| 4 | 0.14 714 | 89 | 0.15 145 | 91 | 0.84 855 | 0.99 568 | 56 | 4 6.1 6.1 6.0 |
| 5 | 0.14 803 | 88 | 0.15 236 | 91 | 0.84 764 | 0.99 566 | 55 | 5 7.7 7.6 7.5 |
| 6 | 0.14 891 | 89 | 0.15 327 | 90 | 0.84 673 | 0.99 565 | 54 | 6 9.2 9.1 9.0 |
| 7 | 0.14 980 | 89 | 0.15 417 | 91 | 0.84 583 | 0.99 563 | 53 | 7 10.7 10.6 10.5 |
| 8 | 0.15 069 | 88 | 0.15 508 | 90 | 0.84 492 | 0.99 561 | 52 | 8 12.3 12.1 12.0 |
| 9 | 0.15 157 | 88 | 0.15 598 | 90 | 0.84 402 | 0.99 559 | 51 | 9 13.8 13.6 13.5 |
| 10 | 0.15 245 | 88 | 0.15 688 | 89 | 0.84 312 | 0.99 557 | 50 | 10 15.3 15.2 15.0 |
| 11 | 0.15 333 | 88 | 0.15 777 | 90 | 0.84 223 | 0.99 556 | 49 | 20 30.7 30.3 30.0 |
| 12 | 0.15 421 | 87 | 0.15 867 | 89 | 0.84 133 | 0.99 554 | 48 | 30 46.0 45.5 45.0 |
| 13 | 0.15 508 | 88 | 0.15 956 | 90 | 0.84 044 | 0.99 552 | 47 | 40 61.3 60.7 60.0 |
| 14 | 0.15 596 | 87 | 0.16 046 | 89 | 0.83 954 | 0.99 550 | 46 | 50 76.7 75.8 75.0 |
| 15 | 0.15 683 | 87 | 0.16 135 | 89 | 0.83 865 | 0.99 548 | 45 | |
| 16 | 0.15 770 | 87 | 0.16 224 | 88 | 0.83 776 | 0.99 546 | 44 | 1 89 88 87 |
| 17 | 0.15 857 | 87 | 0.16 312 | 89 | 0.83 688 | 0.99 545 | 43 | 1 1.5 1.5 1.4 |
| 18 | 0.15 944 | 86 | 0.16 401 | 88 | 0.83 599 | 0.99 543 | 42 | 2 3.0 2.9 2.9 |
| 19 | 0.16 030 | 86 | 0.16 489 | 88 | 0.83 511 | 0.99 541 | 41 | 3 4.4 4.4 4.4 |
| 20 | 0.16 116 | 87 | 0.16 577 | 88 | 0.83 423 | 0.99 539 | 40 | 4 5.9 5.9 5.8 |
| 21 | 0.16 203 | 86 | 0.16 665 | 88 | 0.83 335 | 0.99 537 | 39 | 5 7.4 7.3 7.2 |
| 22 | 0.16 289 | 85 | 0.16 753 | 88 | 0.83 247 | 0.99 535 | 38 | 6 8.9 8.8 8.7 |
| 23 | 0.16 374 | 86 | 0.16 841 | 87 | 0.83 159 | 0.99 533 | 37 | 7 10.4 10.3 10.2 |
| 24 | 0.16 460 | 85 | 0.16 928 | 88 | 0.83 072 | 0.99 532 | 36 | 8 11.9 11.7 11.6 |
| 25 | 0.16 545 | 86 | 0.17 016 | 87 | 0.82 984 | 0.99 530 | 35 | 9 13.4 13.2 13.0 |
| 26 | 0.16 631 | 85 | 0.17 103 | 87 | 0.82 897 | 0.99 528 | 34 | 10 14.8 14.7 14.5 |
| 27 | 0.16 716 | 85 | 0.17 190 | 87 | 0.82 810 | 0.99 526 | 33 | 20 29.7 29.3 29.0 |
| 28 | 0.16 801 | 85 | 0.17 277 | 86 | 0.82 723 | 0.99 524 | 32 | 30 44.5 44.0 43.5 |
| 29 | 0.16 886 | 84 | 0.17 363 | 87 | 0.82 637 | 0.99 522 | 31 | 40 59.3 58.7 58.0 |
| 30 | 0.16 970 | 85 | 0.17 450 | 86 | 0.82 550 | 0.99 520 | 30 | 50 74.2 73.3 72.5 |
| 31 | 0.17 055 | 84 | 0.17 536 | 86 | 0.82 464 | 0.99 518 | 29 | |
| 32 | 0.17 139 | 84 | 0.17 622 | 86 | 0.82 378 | 0.99 517 | 28 | 1 1.4 1.4 1.4 |
| 33 | 0.17 223 | 84 | 0.17 708 | 86 | 0.82 292 | 0.99 515 | 27 | 2 2.9 2.8 2.8 |
| 34 | 0.17 307 | 84 | 0.17 794 | 86 | 0.82 206 | 0.99 513 | 26 | 3 4.3 4.2 4.2 |
| 35 | 0.17 391 | 83 | 0.17 880 | 85 | 0.82 120 | 0.99 511 | 25 | 4 5.7 5.7 5.6 |
| 36 | 0.17 474 | 84 | 0.17 965 | 86 | 0.82 035 | 0.99 509 | 24 | 5 7.2 7.1 7.0 |
| 37 | 0.17 558 | 83 | 0.18 051 | 85 | 0.81 949 | 0.99 507 | 23 | 6 8.6 8.5 8.4 |
| 38 | 0.17 641 | 83 | 0.18 136 | 85 | 0.81 864 | 0.99 505 | 22 | 7 10.0 9.9 9.8 |
| 39 | 0.17 724 | 83 | 0.18 221 | 85 | 0.81 779 | 0.99 503 | 21 | 8 11.5 11.3 11.2 |
| 40 | 0.17 807 | 83 | 0.18 306 | 85 | 0.81 694 | 0.99 501 | 20 | 9 12.9 12.8 12.6 |
| 41 | 0.17 890 | 83 | 0.18 391 | 84 | 0.81 609 | 0.99 499 | 19 | 10 14.3 14.2 14.0 |
| 42 | 0.17 973 | 83 | 0.18 475 | 85 | 0.81 525 | 0.99 497 | 18 | 20 28.7 28.3 28.0 |
| 43 | 0.18 055 | 82 | 0.18 560 | 84 | 0.81 440 | 0.99 495 | 17 | 30 43.0 42.5 42.0 |
| 44 | 0.18 137 | 83 | 0.18 644 | 84 | 0.81 356 | 0.99 494 | 16 | 40 57.3 56.7 56.0 |
| 45 | 0.18 220 | 82 | 0.18 728 | 84 | 0.81 272 | 0.99 492 | 15 | 50 71.7 70.8 70.0 |
| 46 | 0.18 302 | 81 | 0.18 812 | 84 | 0.81 188 | 0.99 490 | 14 | |
| 47 | 0.18 383 | 82 | 0.18 896 | 83 | 0.81 104 | 0.99 488 | 13 | 83 82 81 |
| 48 | 0.18 465 | 82 | 0.18 979 | 84 | 0.81 021 | 0.99 486 | 12 | 1 1.4 1.4 1.4 |
| 49 | 0.18 547 | 81 | 0.19 063 | 83 | 0.80 937 | 0.99 484 | 11 | 2 2.8 2.7 2.7 |
| 50 | 0.18 628 | 81 | 0.19 146 | 83 | 0.80 854 | 0.99 482 | 10 | 3 4.2 4.1 4.0 |
| 51 | 0.18 709 | 81 | 0.19 229 | 83 | 0.80 771 | 0.99 480 | 9 | 4 5.5 5.5 5.4 |
| 52 | 0.18 790 | 81 | 0.19 312 | 83 | 0.80 688 | 0.99 478 | 8 | 5 6.9 6.8 6.8 |
| 53 | 0.18 871 | 81 | 0.19 395 | 83 | 0.80 605 | 0.99 476 | 7 | 6 8.3 8.2 8.1 |
| 54 | 0.18 952 | 81 | 0.19 478 | 83 | 0.80 522 | 0.99 474 | 6 | 7 9.7 9.6 9.4 |
| 55 | 0.19 033 | 80 | 0.19 561 | 82 | 0.80 439 | 0.99 472 | 5 | 8 11.1 10.9 10.8 |
| 56 | 0.19 113 | 80 | 0.19 643 | 82 | 0.80 357 | 0.99 470 | 4 | 9 12.4 12.3 12.2 |
| 57 | 0.19 193 | 80 | 0.19 725 | 82 | 0.80 275 | 0.99 468 | 3 | 10 13.8 13.7 13.5 |
| 58 | 0.19 273 | 80 | 0.19 807 | 82 | 0.80 193 | 0.99 466 | 2 | 20 27.7 27.3 27.0 |
| 59 | 0.19 353 | 80 | 0.19 889 | 82 | 0.80 111 | 0.99 464 | 1 | 30 41.5 41.0 40.5 |
| 60 | 0.19 433 | | 0.19 971 | | 0.80 020 | 0.99 462 | 0 | 40 55.3 54.7 54.0 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | | P P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | | P P | | | | |
|----|----------|----|----------|-----|----------|----------|----|-----|------|------|------|------|
| 0 | 9.19 433 | 80 | 9.19 971 | | 0.80 029 | 9.99 462 | 60 | | | | | |
| 1 | 9.19 513 | 79 | 9.20 053 | 82 | 0.79 947 | 9.99 460 | 59 | | | | | |
| 2 | 9.19 592 | 79 | 9.20 134 | 81 | 0.79 866 | 9.99 458 | 58 | | | | | |
| 3 | 9.19 672 | 80 | 9.20 216 | 82 | 0.79 784 | 9.99 456 | 57 | 1 | 1.3 | 1.3 | 1.3 | 1.3 |
| 4 | 9.19 751 | 79 | 9.20 297 | 81 | 0.79 703 | 9.99 454 | 56 | 2 | 2.7 | 2.6 | 2.6 | 2.6 |
| 5 | 9.19 830 | 79 | 9.20 378 | 81 | 0.79 622 | 9.99 452 | 55 | 3 | 4.0 | 4.0 | 3.9 | 3.8 |
| 6 | 9.19 909 | 79 | 9.20 459 | 81 | 0.79 541 | 9.99 450 | 54 | 4 | 5.3 | 5.3 | 5.2 | 5.1 |
| 7 | 9.19 988 | 79 | 9.20 540 | 81 | 0.79 460 | 9.99 448 | 53 | 5 | 6.7 | 6.6 | 6.5 | 6.4 |
| 8 | 9.20 067 | 79 | 9.20 621 | 81 | 0.79 379 | 9.99 446 | 52 | 6 | 8.0 | 7.9 | 7.8 | 7.7 |
| 9 | 9.20 145 | 78 | 9.20 701 | 80 | 0.79 299 | 9.99 444 | 51 | 7 | 9.3 | 9.2 | 9.1 | 9.0 |
| 10 | 9.20 223 | 78 | 9.20 782 | 81 | 0.79 218 | 9.99 442 | 50 | 8 | 10.7 | 10.5 | 10.4 | 10.3 |
| 11 | 9.20 302 | 79 | 9.20 862 | 80 | 0.79 138 | 9.99 440 | 49 | 9 | 12.0 | 11.8 | 11.7 | 11.6 |
| 12 | 9.20 380 | 78 | 9.20 942 | 80 | 0.79 058 | 9.99 438 | 48 | 10 | 13.3 | 13.2 | 13.0 | 12.8 |
| 13 | 9.20 458 | 78 | 9.21 022 | 80 | 0.78 978 | 9.99 436 | 47 | 20 | 26.7 | 26.3 | 26.0 | 25.7 |
| 14 | 9.20 535 | 77 | 9.21 102 | 80 | 0.78 898 | 9.99 434 | 46 | 30 | 40.0 | 39.5 | 39.0 | 38.5 |
| 15 | 9.20 613 | 78 | 9.21 182 | 80 | 0.78 818 | 9.99 432 | 45 | 40 | 53.3 | 52.7 | 52.0 | 51.3 |
| 16 | 9.20 691 | 78 | 9.21 261 | 79 | 0.78 739 | 9.99 429 | 44 | 50 | 66.7 | 65.8 | 65.0 | 64.2 |
| 17 | 9.20 768 | 77 | 9.21 341 | 80 | 0.78 659 | 9.99 427 | 43 | | | | | |
| 18 | 9.20 845 | 77 | 9.21 420 | 79 | 0.78 580 | 9.99 425 | 42 | | | | | |
| 19 | 9.20 922 | 77 | 9.21 499 | 79 | 0.78 501 | 9.99 423 | 41 | | | | | |
| 20 | 9.20 999 | 77 | 9.21 578 | 79 | 0.78 422 | 9.99 421 | 40 | | | | | |
| 21 | 9.21 076 | 77 | 9.21 657 | 79 | 0.78 343 | 9.99 419 | 39 | | | | | |
| 22 | 9.21 153 | 77 | 9.21 736 | 79 | 0.78 264 | 9.99 417 | 38 | | | | | |
| 23 | 9.21 229 | 76 | 9.21 814 | 78 | 0.78 186 | 9.99 415 | 37 | | | | | |
| 24 | 9.21 306 | 76 | 9.21 893 | 79 | 0.78 107 | 9.99 413 | 36 | | | | | |
| 25 | 9.21 382 | 76 | 9.21 971 | 78 | 0.78 029 | 9.99 411 | 35 | | | | | |
| 26 | 9.21 458 | 76 | 9.22 049 | 78 | 0.77 951 | 9.99 409 | 34 | | | | | |
| 27 | 9.21 534 | 76 | 9.22 127 | 78 | 0.77 873 | 9.99 407 | 33 | | | | | |
| 28 | 9.21 610 | 75 | 9.22 205 | 78 | 0.77 795 | 9.99 404 | 32 | | | | | |
| 29 | 9.21 685 | 75 | 9.22 283 | 78 | 0.77 717 | 9.99 402 | 31 | | | | | |
| 30 | 9.21 761 | 76 | 9.22 361 | 78 | 0.77 639 | 9.99 400 | 30 | | | | | |
| 31 | 9.21 836 | 75 | 9.22 438 | 77 | 0.77 562 | 9.99 398 | 29 | | | | | |
| 32 | 9.21 912 | 76 | 9.22 516 | 78 | 0.77 484 | 9.99 396 | 28 | | | | | |
| 33 | 9.21 987 | 75 | 9.22 593 | 77 | 0.77 407 | 9.99 394 | 27 | | | | | |
| 34 | 9.22 062 | 75 | 9.22 670 | 77 | 0.77 330 | 9.99 392 | 26 | | | | | |
| 35 | 9.22 137 | 75 | 9.22 747 | 77 | 0.77 253 | 9.99 390 | 25 | | | | | |
| 36 | 9.22 211 | 74 | 9.22 824 | 77 | 0.77 176 | 9.99 388 | 24 | | | | | |
| 37 | 9.22 286 | 75 | 9.22 901 | 77 | 0.77 099 | 9.99 385 | 23 | | | | | |
| 38 | 9.22 361 | 74 | 9.22 977 | 76 | 0.77 023 | 9.99 383 | 22 | | | | | |
| 39 | 9.22 435 | 75 | 9.23 054 | 77 | 0.76 946 | 9.99 381 | 21 | | | | | |
| 40 | 9.22 509 | 74 | 9.23 130 | 76 | 0.76 870 | 9.99 379 | 20 | | | | | |
| 41 | 9.22 583 | 74 | 9.23 206 | 76 | 0.76 794 | 9.99 377 | 19 | | | | | |
| 42 | 9.22 657 | 74 | 9.23 283 | 77 | 0.76 717 | 9.99 375 | 18 | | | | | |
| 43 | 9.22 731 | 74 | 9.23 359 | 76 | 0.76 641 | 9.99 372 | 17 | | | | | |
| 44 | 9.22 805 | 73 | 9.23 435 | 76 | 0.76 565 | 9.99 370 | 16 | | | | | |
| 45 | 9.22 878 | 74 | 9.23 510 | 75 | 0.76 490 | 9.99 368 | 15 | | | | | |
| 46 | 9.22 952 | 73 | 9.23 586 | 76 | 0.76 414 | 9.99 366 | 14 | | | | | |
| 47 | 9.23 025 | 73 | 9.23 661 | 75 | 0.76 339 | 9.99 364 | 13 | | | | | |
| 48 | 9.23 098 | 73 | 9.23 737 | 76 | 0.76 263 | 9.99 362 | 12 | | | | | |
| 49 | 9.23 171 | 73 | 9.23 812 | 75 | 0.76 188 | 9.99 359 | 11 | | | | | |
| 50 | 9.23 244 | 73 | 9.23 887 | 75 | 0.76 113 | 9.99 357 | 10 | | | | | |
| 51 | 9.23 317 | 73 | 9.23 962 | 75 | 0.76 038 | 9.99 355 | 9 | | | | | |
| 52 | 9.23 390 | 72 | 9.24 037 | 75 | 0.75 963 | 9.99 353 | 8 | | | | | |
| 53 | 9.23 462 | 73 | 9.24 112 | 74 | 0.75 888 | 9.99 351 | 7 | | | | | |
| 54 | 9.23 535 | 72 | 9.24 186 | 75 | 0.75 814 | 9.99 348 | 6 | | | | | |
| 55 | 9.23 607 | 72 | 9.24 261 | 74 | 0.75 739 | 9.99 346 | 5 | | | | | |
| 56 | 9.23 679 | 73 | 9.24 335 | 75 | 0.75 665 | 9.99 344 | 4 | | | | | |
| 57 | 9.23 752 | 71 | 9.24 410 | 74 | 0.75 590 | 9.99 342 | 3 | | | | | |
| 58 | 9.23 823 | 72 | 9.24 484 | 74 | 0.75 516 | 9.99 340 | 2 | | | | | |
| 59 | 9.23 895 | 72 | 9.24 558 | 74 | 0.75 442 | 9.99 337 | 1 | | | | | |
| 60 | 9.23 967 | 72 | 9.24 632 | 74 | 0.75 368 | 9.99 335 | 0 | | | | | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | | P P | | | | |

| | L Sin | d | L Tan | d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|----|----------|----------|---|----|-----------------------|
| 0 | 0.23 907 | 72 | 0.24 632 | 74 | 0.75 368 | 0.99 335 | 2 | 60 | |
| 1 | 0.24 039 | 71 | 0.24 706 | 73 | 0.75 294 | 0.99 333 | 2 | 59 | 74 73 72 |
| 2 | 0.24 110 | 71 | 0.24 779 | 74 | 0.75 221 | 0.99 331 | 2 | 58 | 1 1.2 1.2 1.2 |
| 3 | 0.24 181 | 72 | 0.24 853 | 73 | 0.75 147 | 0.99 328 | 3 | 57 | 2 2.5 2.4 2.4 |
| 4 | 0.24 253 | 71 | 0.24 926 | 74 | 0.75 074 | 0.99 326 | 2 | 56 | 3 3.7 3.6 3.6 |
| 5 | 0.24 324 | 71 | 0.25 000 | 73 | 0.75 000 | 0.99 324 | 2 | 55 | 4 4.9 4.9 4.8 |
| 6 | 0.24 395 | 71 | 0.25 073 | 73 | 0.74 927 | 0.99 322 | 2 | 54 | 5 6.2 6.1 6.0 |
| 7 | 0.24 466 | 70 | 0.25 146 | 73 | 0.74 854 | 0.99 319 | 3 | 53 | 6 7.4 7.3 7.2 |
| 8 | 0.24 536 | 71 | 0.25 219 | 73 | 0.74 781 | 0.99 317 | 2 | 52 | 7 8.6 8.5 8.4 |
| 9 | 0.24 607 | 70 | 0.25 292 | 73 | 0.74 708 | 0.99 315 | 2 | 51 | 8 9.9 9.7 9.6 |
| 10 | 0.24 677 | 71 | 0.25 365 | 72 | 0.74 635 | 0.99 313 | 3 | 50 | 9 11.1 11.0 10.8 |
| 11 | 0.24 748 | 70 | 0.25 437 | 73 | 0.74 563 | 0.99 310 | 2 | 49 | 10 12.3 12.2 12.0 |
| 12 | 0.24 818 | 70 | 0.25 510 | 72 | 0.74 490 | 0.99 308 | 2 | 48 | 20 24.7 24.3 24.0 |
| 13 | 0.24 888 | 70 | 0.25 582 | 73 | 0.74 418 | 0.99 306 | 2 | 47 | 30 37.0 36.5 36.0 |
| 14 | 0.24 958 | 70 | 0.25 655 | 72 | 0.74 345 | 0.99 304 | 2 | 46 | 40 49.3 48.7 48.0 |
| 15 | 0.25 028 | 70 | 0.25 727 | 72 | 0.74 273 | 0.99 301 | 3 | 45 | 50 61.7 60.8 60.0 |
| 16 | 0.25 098 | 70 | 0.25 799 | 72 | 0.74 201 | 0.99 299 | 2 | 44 | |
| 17 | 0.25 168 | 69 | 0.25 871 | 72 | 0.74 129 | 0.99 297 | 3 | 43 | 71 70 69 |
| 18 | 0.25 237 | 70 | 0.25 943 | 72 | 0.74 057 | 0.99 294 | 2 | 42 | 1 1.2 1.2 1.2 |
| 19 | 0.25 307 | 69 | 0.26 015 | 71 | 0.73 985 | 0.99 292 | 2 | 41 | 2 2.4 2.3 2.3 |
| 20 | 0.25 376 | 69 | 0.26 086 | 72 | 0.73 914 | 0.99 290 | 2 | 40 | 3 3.6 3.5 3.4 |
| 21 | 0.25 445 | 69 | 0.26 158 | 71 | 0.73 842 | 0.99 288 | 2 | 39 | 4 4.7 4.7 4.6 |
| 22 | 0.25 514 | 69 | 0.26 229 | 72 | 0.73 771 | 0.99 285 | 3 | 38 | 5 5.9 5.8 5.8 |
| 23 | 0.25 583 | 69 | 0.26 301 | 71 | 0.73 699 | 0.99 283 | 2 | 37 | 6 7.1 7.0 6.9 |
| 24 | 0.25 652 | 69 | 0.26 372 | 71 | 0.73 628 | 0.99 281 | 2 | 36 | 7 8.3 8.2 8.0 |
| 25 | 0.25 721 | 69 | 0.26 443 | 71 | 0.73 557 | 0.99 278 | 3 | 35 | 8 9.5 9.3 9.2 |
| 26 | 0.25 790 | 68 | 0.26 514 | 71 | 0.73 486 | 0.99 276 | 2 | 34 | 9 10.6 10.5 10.4 |
| 27 | 0.25 858 | 68 | 0.26 585 | 70 | 0.73 415 | 0.99 274 | 2 | 33 | 10 11.8 11.7 11.5 |
| 28 | 0.25 927 | 69 | 0.26 655 | 71 | 0.73 345 | 0.99 271 | 3 | 32 | 20 23.7 23.3 23.0 |
| 29 | 0.25 995 | 68 | 0.26 726 | 71 | 0.73 274 | 0.99 269 | 2 | 31 | 30 35.5 35.0 34.5 |
| 30 | 0.26 063 | 68 | 0.26 797 | 70 | 0.73 203 | 0.99 267 | 2 | 30 | 40 47.3 46.7 46.0 |
| 31 | 0.26 131 | 68 | 0.26 867 | 70 | 0.73 133 | 0.99 264 | 3 | 29 | 50 59.2 58.3 57.5 |
| 32 | 0.26 199 | 68 | 0.26 937 | 71 | 0.73 063 | 0.99 262 | 2 | 28 | |
| 33 | 0.26 267 | 68 | 0.27 008 | 70 | 0.72 992 | 0.99 260 | 2 | 27 | 68 67 66 |
| 34 | 0.26 335 | 68 | 0.27 078 | 70 | 0.72 922 | 0.99 257 | 3 | 26 | 1 1.1 1.1 1.1 |
| 35 | 0.26 403 | 67 | 0.27 148 | 70 | 0.72 852 | 0.99 255 | 2 | 25 | 2 2.3 2.2 2.2 |
| 36 | 0.26 470 | 68 | 0.27 218 | 70 | 0.72 782 | 0.99 252 | 3 | 24 | 3 3.4 3.4 3.3 |
| 37 | 0.26 538 | 67 | 0.27 288 | 69 | 0.72 712 | 0.99 250 | 2 | 23 | 4 4.5 4.5 4.4 |
| 38 | 0.26 605 | 67 | 0.27 357 | 70 | 0.72 643 | 0.99 248 | 2 | 22 | 5 5.7 5.6 5.5 |
| 39 | 0.26 672 | 67 | 0.27 427 | 69 | 0.72 573 | 0.99 245 | 3 | 21 | 6 6.8 6.7 6.6 |
| 40 | 0.26 739 | 67 | 0.27 496 | 70 | 0.72 504 | 0.99 243 | 2 | 20 | 7 7.9 7.8 7.7 |
| 41 | 0.26 806 | 67 | 0.27 566 | 69 | 0.72 434 | 0.99 241 | 2 | 19 | 8 9.1 8.9 8.8 |
| 42 | 0.26 873 | 67 | 0.27 635 | 69 | 0.72 365 | 0.99 238 | 3 | 18 | 9 10.2 10.0 9.9 |
| 43 | 0.26 940 | 67 | 0.27 704 | 69 | 0.72 296 | 0.99 236 | 2 | 17 | 10 11.3 11.2 11.0 |
| 44 | 0.27 007 | 66 | 0.27 773 | 69 | 0.72 227 | 0.99 233 | 3 | 16 | 20 22.7 22.3 22.0 |
| 45 | 0.27 073 | 67 | 0.27 842 | 69 | 0.72 158 | 0.99 231 | 2 | 15 | 30 34.0 33.5 33.0 |
| 46 | 0.27 140 | 66 | 0.27 911 | 69 | 0.72 089 | 0.99 229 | 2 | 14 | 40 45.3 44.7 44.0 |
| 47 | 0.27 206 | 67 | 0.27 980 | 69 | 0.72 020 | 0.99 226 | 3 | 13 | 50 56.7 55.8 55.0 |
| 48 | 0.27 273 | 66 | 0.28 049 | 68 | 0.71 951 | 0.99 224 | 2 | 12 | |
| 49 | 0.27 339 | 66 | 0.28 117 | 69 | 0.71 883 | 0.99 221 | 3 | 11 | 3 3 3 |
| 50 | 0.27 405 | 66 | 0.28 186 | 68 | 0.71 814 | 0.99 219 | 2 | 10 | 74 73 72 |
| 51 | 0.27 471 | 66 | 0.28 254 | 69 | 0.71 746 | 0.99 217 | 2 | 9 | 0 12.3 12.2 12.0 |
| 52 | 0.27 537 | 65 | 0.28 323 | 68 | 0.71 677 | 0.99 214 | 3 | 8 | 1 37.0 36.5 36.0 |
| 53 | 0.27 602 | 66 | 0.28 391 | 68 | 0.71 609 | 0.99 212 | 2 | 7 | 2 61.7 60.8 60.0 |
| 54 | 0.27 668 | 66 | 0.28 459 | 68 | 0.71 541 | 0.99 209 | 3 | 6 | |
| 55 | 0.27 734 | 65 | 0.28 527 | 68 | 0.71 473 | 0.99 207 | 2 | 5 | 3 3 3 3 |
| 56 | 0.27 799 | 65 | 0.28 595 | 67 | 0.71 405 | 0.99 204 | 3 | 4 | 71 70 69 68 |
| 57 | 0.27 864 | 66 | 0.28 662 | 68 | 0.71 338 | 0.99 202 | 2 | 3 | 0 11.8 11.7 11.5 11.3 |
| 58 | 0.27 930 | 65 | 0.28 730 | 68 | 0.71 270 | 0.99 200 | 3 | 2 | 1 35.5 35.0 34.5 34.0 |
| 59 | 0.27 995 | 65 | 0.28 798 | 67 | 0.71 202 | 0.99 197 | 2 | 1 | 2 59.2 58.3 57.5 56.7 |
| 60 | 0.28 060 | 65 | 0.28 865 | | 0.71 135 | 0.99 195 | 2 | 0 | 3 |
| | L Cos | d | L Cot | d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | cd | L Cot | L Cos | d | | P | P | |
|----|----------|----|----------|----|----------|----------|---|----|----|------|------|
| 0 | 9.28 060 | 65 | 9.28 865 | 68 | 0.71 135 | 9.99 195 | 3 | 60 | 65 | 64 | 63 |
| 1 | 9.28 125 | 65 | 9.28 933 | 67 | 0.71 067 | 9.99 192 | 2 | 59 | 1 | 1.1 | 1.0 |
| 2 | 9.28 190 | 64 | 9.29 000 | 67 | 0.71 000 | 9.99 190 | 3 | 58 | 2 | 2.2 | 2.1 |
| 3 | 9.28 254 | 65 | 9.29 067 | 67 | 0.70 933 | 9.99 187 | 2 | 57 | 3 | 3.2 | 3.2 |
| 4 | 9.28 319 | 65 | 9.29 134 | 67 | 0.70 866 | 9.99 185 | 3 | 56 | 4 | 4.3 | 4.2 |
| 5 | 9.28 384 | 64 | 9.29 201 | 67 | 0.70 799 | 9.99 182 | 2 | 55 | 5 | 5.4 | 5.3 |
| 6 | 9.28 448 | 64 | 9.29 268 | 67 | 0.70 732 | 9.99 180 | 3 | 54 | 6 | 6.5 | 6.4 |
| 7 | 9.28 512 | 65 | 9.29 335 | 67 | 0.70 665 | 9.99 177 | 2 | 53 | 7 | 7.6 | 7.5 |
| 8 | 9.28 577 | 64 | 9.29 402 | 66 | 0.70 598 | 9.99 175 | 3 | 52 | 8 | 8.7 | 8.6 |
| 9 | 9.28 641 | 64 | 9.29 468 | 67 | 0.70 532 | 9.99 172 | 2 | 51 | 9 | 9.8 | 9.7 |
| 10 | 9.28 705 | 64 | 9.29 535 | 66 | 0.70 465 | 9.99 170 | 3 | 50 | 10 | 10.8 | 10.7 |
| 11 | 9.28 769 | 64 | 9.29 601 | 67 | 0.70 399 | 9.99 167 | 2 | 49 | 20 | 21.7 | 21.3 |
| 12 | 9.28 833 | 63 | 9.29 668 | 66 | 0.70 332 | 9.99 165 | 3 | 48 | 30 | 32.5 | 32.0 |
| 13 | 9.28 896 | 64 | 9.29 734 | 66 | 0.70 266 | 9.99 162 | 2 | 47 | 40 | 43.3 | 42.7 |
| 14 | 9.28 960 | 64 | 9.29 800 | 66 | 0.70 200 | 9.99 160 | 3 | 46 | 50 | 54.2 | 53.3 |
| 15 | 9.29 024 | 63 | 9.29 866 | 66 | 0.70 134 | 9.99 157 | 2 | 45 | | | |
| 16 | 9.29 087 | 63 | 9.29 932 | 66 | 0.70 068 | 9.99 155 | 3 | 44 | 62 | 61 | 60 |
| 17 | 9.29 150 | 64 | 9.29 998 | 66 | 0.70 002 | 9.99 152 | 2 | 43 | 1 | 1.0 | 1.0 |
| 18 | 9.29 214 | 63 | 9.30 064 | 66 | 0.69 936 | 9.99 150 | 3 | 42 | 2 | 2.1 | 2.0 |
| 19 | 9.29 277 | 63 | 9.30 130 | 65 | 0.69 870 | 9.99 147 | 2 | 41 | 3 | 3.1 | 3.0 |
| 20 | 9.29 340 | 63 | 9.30 195 | 66 | 0.69 805 | 9.99 145 | 3 | 40 | 4 | 4.1 | 4.0 |
| 21 | 9.29 403 | 63 | 9.30 261 | 65 | 0.69 739 | 9.99 142 | 2 | 39 | 5 | 5.2 | 5.1 |
| 22 | 9.29 466 | 63 | 9.30 326 | 65 | 0.69 674 | 9.99 140 | 3 | 38 | 6 | 6.2 | 6.1 |
| 23 | 9.29 529 | 62 | 9.30 391 | 66 | 0.69 609 | 9.99 137 | 2 | 37 | 7 | 7.2 | 7.1 |
| 24 | 9.29 591 | 63 | 9.30 457 | 65 | 0.69 543 | 9.99 135 | 3 | 36 | 8 | 8.3 | 8.1 |
| 25 | 9.29 654 | 62 | 9.30 522 | 65 | 0.69 478 | 9.99 132 | 2 | 35 | 9 | 9.3 | 9.2 |
| 26 | 9.29 716 | 63 | 9.30 587 | 65 | 0.69 413 | 9.99 130 | 3 | 34 | 10 | 10.3 | 10.2 |
| 27 | 9.29 779 | 62 | 9.30 652 | 65 | 0.69 348 | 9.99 127 | 2 | 33 | 20 | 20.7 | 20.3 |
| 28 | 9.29 841 | 62 | 9.30 717 | 65 | 0.69 283 | 9.99 124 | 3 | 32 | 30 | 31.0 | 30.5 |
| 29 | 9.29 903 | 63 | 9.30 782 | 64 | 0.69 218 | 9.99 122 | 2 | 31 | 40 | 41.3 | 40.7 |
| 30 | 9.29 966 | 62 | 9.30 846 | 65 | 0.69 154 | 9.99 119 | 3 | 30 | 50 | 51.7 | 50.8 |
| 31 | 9.30 028 | 62 | 9.30 911 | 64 | 0.69 089 | 9.99 117 | 2 | 29 | | | |
| 32 | 9.30 090 | 61 | 9.30 975 | 65 | 0.69 025 | 9.99 114 | 3 | 28 | 59 | 3 | 2 |
| 33 | 9.30 151 | 62 | 9.31 040 | 64 | 0.68 960 | 9.99 112 | 2 | 27 | 1 | 1.0 | 0.0 |
| 34 | 9.30 213 | 62 | 9.31 104 | 64 | 0.68 896 | 9.99 109 | 3 | 26 | 2 | 2.0 | 0.1 |
| 35 | 9.30 275 | 61 | 9.31 168 | 65 | 0.68 832 | 9.99 106 | 2 | 25 | 3 | 3.0 | 0.2 |
| 36 | 9.30 336 | 62 | 9.31 233 | 64 | 0.68 767 | 9.99 104 | 3 | 24 | 4 | 3.9 | 0.2 |
| 37 | 9.30 398 | 61 | 9.31 297 | 64 | 0.68 703 | 9.99 101 | 2 | 23 | 5 | 4.9 | 0.2 |
| 38 | 9.30 459 | 62 | 9.31 361 | 64 | 0.68 639 | 9.99 099 | 3 | 22 | 6 | 5.9 | 0.3 |
| 39 | 9.30 521 | 61 | 9.31 425 | 64 | 0.68 575 | 9.99 096 | 2 | 21 | 7 | 6.9 | 0.4 |
| 40 | 9.30 582 | 61 | 9.31 489 | 63 | 0.68 511 | 9.99 093 | 3 | 20 | 8 | 7.9 | 0.4 |
| 41 | 9.30 643 | 61 | 9.31 552 | 64 | 0.68 448 | 9.99 091 | 2 | 19 | 9 | 8.8 | 0.4 |
| 42 | 9.30 704 | 61 | 9.31 616 | 63 | 0.68 384 | 9.99 088 | 3 | 18 | 10 | 9.8 | 0.5 |
| 43 | 9.30 765 | 61 | 9.31 679 | 64 | 0.68 321 | 9.99 086 | 2 | 17 | 20 | 19.7 | 1.0 |
| 44 | 9.30 826 | 61 | 9.31 743 | 63 | 0.68 257 | 9.99 083 | 3 | 16 | 30 | 29.5 | 1.5 |
| 45 | 9.30 887 | 60 | 9.31 806 | 64 | 0.68 194 | 9.99 080 | 2 | 15 | 40 | 39.3 | 2.0 |
| 46 | 9.30 947 | 61 | 9.31 870 | 63 | 0.68 130 | 9.99 078 | 3 | 14 | 50 | 49.2 | 2.5 |
| 47 | 9.31 008 | 60 | 9.31 933 | 63 | 0.68 067 | 9.99 075 | 2 | 13 | | | |
| 48 | 9.31 068 | 61 | 9.31 996 | 63 | 0.68 004 | 9.99 072 | 3 | 12 | 3 | 3 | 3 |
| 49 | 9.31 129 | 60 | 9.32 059 | 63 | 0.67 941 | 9.99 070 | 2 | 11 | 67 | 66 | 65 |
| 50 | 9.31 189 | 61 | 9.32 122 | 63 | 0.67 878 | 9.99 067 | 3 | 10 | 0 | 11.2 | 11.0 |
| 51 | 9.31 250 | 60 | 9.32 185 | 63 | 0.67 815 | 9.99 064 | 2 | 9 | 1 | 33.5 | 33.0 |
| 52 | 9.31 310 | 60 | 9.32 248 | 63 | 0.67 752 | 9.99 062 | 3 | 8 | 2 | 55.8 | 55.0 |
| 53 | 9.31 370 | 60 | 9.32 311 | 62 | 0.67 689 | 9.99 059 | 2 | 7 | 3 | | |
| 54 | 9.31 430 | 60 | 9.32 373 | 63 | 0.67 627 | 9.99 056 | 3 | 6 | | | |
| 55 | 9.31 490 | 59 | 9.32 436 | 62 | 0.67 564 | 9.99 054 | 2 | 5 | 3 | 3 | 3 |
| 56 | 9.31 549 | 60 | 9.32 498 | 63 | 0.67 502 | 9.99 051 | 3 | 4 | 64 | 63 | 62 |
| 57 | 9.31 609 | 60 | 9.32 561 | 62 | 0.67 439 | 9.99 048 | 2 | 3 | 0 | 10.7 | 10.5 |
| 58 | 9.31 669 | 59 | 9.32 623 | 62 | 0.67 377 | 9.99 046 | 3 | 2 | 1 | 32.0 | 31.5 |
| 59 | 9.31 728 | 60 | 9.32 685 | 62 | 0.67 315 | 9.99 043 | 2 | 1 | 2 | 53.3 | 52.5 |
| 60 | 9.31 788 | | 9.32 747 | | 0.67 253 | 9.99 040 | 3 | 0 | 3 | | |
| | L Cos | d | L Cot | cd | L Tan | L Sin | d | | P | P | |

| | L Sin | d | L Tan | cd | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|----|----------|----------|---|----|----|------|
| 0 | 9.31 788 | 59 | 9.32 747 | 63 | 0.67 253 | 9.99 040 | 2 | 60 | | |
| 1 | 9.31 747 | 60 | 9.32 810 | 62 | 0.67 190 | 9.99 038 | 3 | 59 | 63 | 62 |
| 2 | 9.31 907 | 59 | 9.32 872 | 61 | 0.67 128 | 9.99 035 | 3 | 58 | 1 | 1.0 |
| 3 | 9.31 960 | 59 | 9.32 933 | 62 | 0.67 067 | 9.99 032 | 2 | 57 | 2 | 2.1 |
| 4 | 9.32 025 | 59 | 9.32 995 | 62 | 0.67 005 | 9.99 030 | 3 | 56 | 3 | 3.2 |
| 5 | 9.32 084 | 59 | 9.33 057 | 62 | 0.66 943 | 9.99 027 | 3 | 55 | 4 | 4.2 |
| 6 | 9.32 143 | 59 | 9.33 119 | 61 | 0.66 881 | 9.99 024 | 2 | 54 | 5 | 5.2 |
| 7 | 9.32 202 | 59 | 9.33 180 | 62 | 0.66 820 | 9.99 022 | 3 | 53 | 6 | 6.3 |
| 8 | 9.32 261 | 58 | 9.33 242 | 61 | 0.66 758 | 9.99 019 | 3 | 52 | 7 | 7.4 |
| 9 | 9.32 319 | 59 | 9.33 303 | 62 | 0.66 697 | 9.99 016 | 3 | 51 | 8 | 8.4 |
| 10 | 9.32 378 | 59 | 9.33 365 | 61 | 0.66 635 | 9.99 013 | 2 | 50 | 9 | 9.4 |
| 11 | 9.32 437 | 58 | 9.33 426 | 61 | 0.66 574 | 9.99 011 | 3 | 49 | 10 | 10.5 |
| 12 | 9.32 495 | 58 | 9.33 487 | 61 | 0.66 513 | 9.99 008 | 3 | 48 | 20 | 21.0 |
| 13 | 9.32 553 | 59 | 9.33 548 | 61 | 0.66 452 | 9.99 005 | 3 | 47 | 30 | 31.5 |
| 14 | 9.32 612 | 58 | 9.33 609 | 61 | 0.66 391 | 9.99 002 | 3 | 46 | 40 | 42.0 |
| 15 | 9.32 670 | 58 | 9.33 670 | 61 | 0.66 330 | 9.99 000 | 2 | 45 | 50 | 52.5 |
| 16 | 9.32 728 | 58 | 9.33 731 | 61 | 0.66 269 | 9.98 997 | 3 | 44 | | |
| 17 | 9.32 786 | 58 | 9.33 792 | 61 | 0.66 208 | 9.98 994 | 3 | 43 | 60 | 59 |
| 18 | 9.32 844 | 58 | 9.33 853 | 60 | 0.66 147 | 9.98 991 | 2 | 42 | 1 | 1.0 |
| 19 | 9.32 902 | 58 | 9.33 913 | 61 | 0.66 087 | 9.98 989 | 3 | 41 | 2 | 2.0 |
| 20 | 9.32 960 | 57 | 9.33 974 | 60 | 0.66 026 | 9.98 986 | 3 | 40 | 3 | 3.0 |
| 21 | 9.33 018 | 58 | 9.34 034 | 61 | 0.65 966 | 9.98 983 | 3 | 39 | 4 | 4.0 |
| 22 | 9.33 075 | 58 | 9.34 095 | 60 | 0.65 905 | 9.98 980 | 2 | 38 | 5 | 5.0 |
| 23 | 9.33 133 | 57 | 9.34 155 | 60 | 0.65 845 | 9.98 978 | 3 | 37 | 6 | 6.0 |
| 24 | 9.33 190 | 58 | 9.34 215 | 61 | 0.65 785 | 9.98 975 | 3 | 36 | 7 | 7.0 |
| 25 | 9.33 248 | 57 | 9.34 276 | 60 | 0.65 724 | 9.98 972 | 3 | 35 | 8 | 8.0 |
| 26 | 9.33 305 | 58 | 9.34 336 | 60 | 0.65 664 | 9.98 969 | 2 | 34 | 9 | 9.0 |
| 27 | 9.33 362 | 57 | 9.34 396 | 60 | 0.65 604 | 9.98 967 | 3 | 33 | 10 | 10.0 |
| 28 | 9.33 420 | 57 | 9.34 456 | 60 | 0.65 544 | 9.98 964 | 3 | 32 | 20 | 20.0 |
| 29 | 9.33 477 | 57 | 9.34 516 | 60 | 0.65 484 | 9.98 961 | 3 | 31 | 30 | 30.0 |
| 30 | 9.33 534 | 57 | 9.34 576 | 59 | 0.65 424 | 9.98 958 | 3 | 30 | 40 | 40.0 |
| 31 | 9.33 591 | 56 | 9.34 635 | 60 | 0.65 365 | 9.98 955 | 2 | 29 | 50 | 50.0 |
| 32 | 9.33 647 | 57 | 9.34 695 | 60 | 0.65 305 | 9.98 953 | 2 | 28 | | |
| 33 | 9.33 704 | 57 | 9.34 755 | 59 | 0.65 245 | 9.98 950 | 3 | 27 | 57 | 56 |
| 34 | 9.33 761 | 57 | 9.34 814 | 60 | 0.65 186 | 9.98 947 | 3 | 26 | 1 | 1.0 |
| 35 | 9.33 818 | 56 | 9.34 874 | 59 | 0.65 126 | 9.98 944 | 3 | 25 | 2 | 1.9 |
| 36 | 9.33 874 | 57 | 9.34 933 | 59 | 0.65 067 | 9.98 941 | 3 | 24 | 3 | 2.8 |
| 37 | 9.33 931 | 56 | 9.34 992 | 59 | 0.65 008 | 9.98 938 | 2 | 23 | 4 | 3.8 |
| 38 | 9.33 987 | 56 | 9.35 051 | 60 | 0.64 949 | 9.98 936 | 3 | 22 | 5 | 4.8 |
| 39 | 9.34 043 | 57 | 9.35 111 | 59 | 0.64 889 | 9.98 933 | 3 | 21 | 6 | 5.7 |
| 40 | 9.34 100 | 56 | 9.35 170 | 59 | 0.64 830 | 9.98 930 | 3 | 20 | 7 | 6.6 |
| 41 | 9.34 156 | 56 | 9.35 229 | 59 | 0.64 771 | 9.98 927 | 3 | 19 | 8 | 7.6 |
| 42 | 9.34 212 | 56 | 9.35 288 | 59 | 0.64 712 | 9.98 924 | 3 | 18 | 9 | 8.6 |
| 43 | 9.34 268 | 56 | 9.35 347 | 58 | 0.64 653 | 9.98 921 | 2 | 17 | 10 | 9.5 |
| 44 | 9.34 324 | 56 | 9.35 405 | 59 | 0.64 595 | 9.98 919 | 3 | 16 | 20 | 19.0 |
| 45 | 9.34 380 | 56 | 9.35 464 | 59 | 0.64 536 | 9.98 916 | 3 | 15 | 30 | 28.5 |
| 46 | 9.34 436 | 55 | 9.35 523 | 58 | 0.64 477 | 9.98 913 | 3 | 14 | 40 | 38.0 |
| 47 | 9.34 491 | 56 | 9.35 581 | 59 | 0.64 419 | 9.98 910 | 3 | 13 | 50 | 47.5 |
| 48 | 9.34 547 | 55 | 9.35 640 | 58 | 0.64 360 | 9.98 907 | 3 | 12 | | |
| 49 | 9.34 602 | 56 | 9.35 698 | 59 | 0.64 302 | 9.98 904 | 3 | 11 | 3 | 3 |
| 50 | 9.34 658 | 55 | 9.35 757 | 59 | 0.64 243 | 9.98 901 | 3 | 10 | 62 | 61 |
| 51 | 9.34 713 | 56 | 9.35 815 | 58 | 0.64 185 | 9.98 898 | 3 | 9 | 60 | 60 |
| 52 | 9. 4 769 | 55 | 9.35 873 | 58 | 0.64 127 | 9.98 896 | 2 | 8 | 1 | 10.3 |
| 53 | 9.34 824 | 55 | 9.35 931 | 58 | 0.64 069 | 9.98 893 | 3 | 7 | 2 | 10.2 |
| 54 | 9.34 879 | 55 | 9.35 989 | 58 | 0.64 011 | 9.98 890 | 3 | 6 | 3 | 30.5 |
| 55 | 9.34 934 | 55 | 9.36 047 | 58 | 0.63 953 | 9.98 887 | 3 | 5 | | 50.0 |
| 56 | 9.34 989 | 55 | 9.36 105 | 58 | 0.63 895 | 9.98 884 | 3 | 4 | 3 | 3 |
| 57 | 9.35 044 | 55 | 9.36 163 | 58 | 0.63 837 | 9.98 881 | 3 | 3 | 59 | 58 |
| 58 | 9.35 099 | 55 | 9.36 221 | 58 | 0.63 779 | 9.98 878 | 3 | 2 | 60 | 57 |
| 59 | 9.35 154 | 55 | 9.36 279 | 58 | 0.63 721 | 9.98 875 | 3 | 1 | 1 | 9.8 |
| 60 | 9.35 209 | 55 | 9.36 336 | 57 | 0.63 664 | 9.98 872 | 3 | 0 | 2 | 9.7 |
| | | | | | | | | | 3 | 20.0 |
| | | | | | | | | | | 28.5 |
| | | | | | | | | | | 47.5 |
| | L Cos | d | L Cot | cd | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P | P | | | |
|----|----------|----|----------|-----|----------|----------|---|----|----|------|------|------|-----|
| 0 | 9.35 209 | | 9.36 336 | | 0.63 664 | 9.98 872 | | 60 | 57 | 56 | 55 | | |
| 1 | 9.35 263 | 54 | 9.36 394 | 58 | 0.63 606 | 9.98 869 | 3 | 59 | 1 | 1.0 | 0.9 | 0.9 | |
| 2 | 9.35 318 | 55 | 9.36 452 | 58 | 0.63 548 | 9.98 867 | 2 | 58 | 2 | 1.9 | 1.9 | 1.8 | |
| 3 | 9.35 373 | 54 | 9.36 509 | 57 | 0.63 491 | 9.98 864 | 3 | 57 | 3 | 2.8 | 2.8 | 2.8 | |
| 4 | 9.35 427 | 54 | 9.36 566 | 58 | 0.63 434 | 9.98 861 | 3 | 56 | 4 | 3.8 | 3.7 | 3.7 | |
| 5 | 9.35 481 | 54 | 9.36 624 | 57 | 0.63 376 | 9.98 858 | 3 | 55 | 5 | 4.8 | 4.7 | 4.6 | |
| 6 | 9.35 536 | 55 | 9.36 681 | 57 | 0.63 319 | 9.98 855 | 3 | 54 | 6 | 5.7 | 5.6 | 5.5 | |
| 7 | 9.35 590 | 54 | 9.36 738 | 57 | 0.63 262 | 9.98 852 | 3 | 53 | 7 | 6.6 | 6.5 | 6.4 | |
| 8 | 9.35 644 | 54 | 9.36 795 | 57 | 0.63 205 | 9.98 849 | 3 | 52 | 8 | 7.6 | 7.5 | 7.3 | |
| 9 | 9.35 698 | 54 | 9.36 852 | 57 | 0.63 148 | 9.98 846 | 3 | 51 | 9 | 8.6 | 8.4 | 8.2 | |
| 10 | 9.35 752 | 54 | 9.36 909 | 57 | 0.63 091 | 9.98 843 | 3 | 50 | 10 | 9.5 | 9.3 | 9.2 | |
| 11 | 9.35 806 | 54 | 9.36 966 | 57 | 0.63 034 | 9.98 840 | 3 | 49 | 20 | 19.0 | 18.7 | 18.3 | |
| 12 | 9.35 860 | 54 | 9.37 023 | 57 | 0.62 977 | 9.98 837 | 3 | 48 | 30 | 28.5 | 28.0 | 27.5 | |
| 13 | 9.35 914 | 54 | 9.37 080 | 57 | 0.62 920 | 9.98 834 | 3 | 47 | 40 | 38.0 | 37.3 | 36.7 | |
| 14 | 9.35 968 | 54 | 9.37 137 | 57 | 0.62 863 | 9.98 831 | 3 | 46 | 50 | 47.5 | 46.7 | 45.8 | |
| 15 | 9.36 022 | 54 | 9.37 193 | 56 | 0.62 807 | 9.98 828 | 3 | 45 | | 54 | 53 | 52 | |
| 16 | 9.36 075 | 54 | 9.37 250 | 56 | 0.62 750 | 9.98 825 | 3 | 44 | 1 | 0.9 | 0.9 | 0.9 | |
| 17 | 9.36 129 | 53 | 9.37 306 | 57 | 0.62 694 | 9.98 822 | 3 | 43 | 2 | 1.8 | 1.8 | 1.7 | |
| 18 | 9.36 182 | 54 | 9.37 363 | 56 | 0.62 637 | 9.98 819 | 3 | 42 | 3 | 2.7 | 2.6 | 2.6 | |
| 19 | 9.36 236 | 53 | 9.37 419 | 57 | 0.62 581 | 9.98 816 | 3 | 41 | 4 | 3.6 | 3.5 | 3.5 | |
| 20 | 9.36 289 | 53 | 9.37 476 | 56 | 0.62 524 | 9.98 813 | 3 | 40 | 5 | 4.5 | 4.4 | 4.3 | |
| 21 | 9.36 342 | 53 | 9.37 532 | 56 | 0.62 468 | 9.98 810 | 3 | 39 | 6 | 5.4 | 5.3 | 5.2 | |
| 22 | 9.36 395 | 54 | 9.37 588 | 56 | 0.62 412 | 9.98 807 | 3 | 38 | 7 | 6.3 | 6.2 | 6.1 | |
| 23 | 9.36 449 | 53 | 9.37 644 | 56 | 0.62 356 | 9.98 804 | 3 | 37 | 8 | 7.2 | 7.1 | 6.9 | |
| 24 | 9.36 502 | 53 | 9.37 700 | 56 | 0.62 300 | 9.98 801 | 3 | 36 | 9 | 8.1 | 8.0 | 7.8 | |
| 25 | 9.36 555 | 53 | 9.37 756 | 56 | 0.62 244 | 9.98 798 | 3 | 35 | 10 | 9.0 | 8.8 | 8.7 | |
| 26 | 9.36 608 | 52 | 9.37 812 | 56 | 0.62 188 | 9.98 795 | 3 | 34 | 20 | 18.0 | 17.7 | 17.3 | |
| 27 | 9.36 660 | 53 | 9.37 868 | 56 | 0.62 132 | 9.98 792 | 3 | 33 | 30 | 27.0 | 26.5 | 26.0 | |
| 28 | 9.36 713 | 53 | 9.37 924 | 56 | 0.62 076 | 9.98 789 | 3 | 32 | 40 | 36.0 | 35.3 | 34.7 | |
| 29 | 9.36 766 | 53 | 9.37 980 | 55 | 0.62 020 | 9.98 786 | 3 | 31 | 50 | 45.0 | 44.2 | 43.3 | |
| 30 | 9.36 819 | 52 | 9.38 035 | 56 | 0.61 965 | 9.98 783 | 3 | 30 | | 51 | 4 | 3 | 2 |
| 31 | 9.36 871 | 53 | 9.38 091 | 56 | 0.61 909 | 9.98 780 | 3 | 29 | 1 | 0.8 | 0.1 | 0.0 | 0.0 |
| 32 | 9.36 924 | 52 | 9.38 147 | 56 | 0.61 853 | 9.98 777 | 3 | 28 | 2 | 1.7 | 0.1 | 0.1 | 0.1 |
| 33 | 9.36 976 | 52 | 9.38 202 | 55 | 0.61 797 | 9.98 774 | 3 | 27 | 3 | 2.6 | 0.2 | 0.2 | 0.1 |
| 34 | 9.37 028 | 53 | 9.38 257 | 56 | 0.61 743 | 9.98 771 | 3 | 26 | 4 | 3.4 | 0.3 | 0.2 | 0.1 |
| 35 | 9.37 081 | 52 | 9.38 313 | 56 | 0.61 687 | 9.98 768 | 3 | 25 | 5 | 4.2 | 0.3 | 0.2 | 0.2 |
| 36 | 9.37 133 | 52 | 9.38 368 | 55 | 0.61 632 | 9.98 765 | 3 | 24 | 6 | 5.1 | 0.4 | 0.3 | 0.2 |
| 37 | 9.37 185 | 52 | 9.38 423 | 56 | 0.61 577 | 9.98 762 | 3 | 23 | 7 | 6.0 | 0.5 | 0.4 | 0.2 |
| 38 | 9.37 237 | 52 | 9.38 479 | 56 | 0.61 521 | 9.98 759 | 3 | 22 | 8 | 6.8 | 0.5 | 0.4 | 0.3 |
| 39 | 9.37 289 | 52 | 9.38 534 | 55 | 0.61 466 | 9.98 756 | 3 | 21 | 9 | 7.6 | 0.6 | 0.4 | 0.3 |
| 40 | 9.37 341 | 52 | 9.38 589 | 55 | 0.61 411 | 9.98 753 | 3 | 20 | 10 | 8.5 | 0.7 | 0.5 | 0.3 |
| 41 | 9.37 393 | 52 | 9.38 644 | 55 | 0.61 356 | 9.98 750 | 3 | 19 | 20 | 17.0 | 1.3 | 1.0 | 0.7 |
| 42 | 9.37 445 | 52 | 9.38 699 | 55 | 0.61 301 | 9.98 746 | 4 | 18 | 30 | 25.5 | 2.0 | 1.5 | 1.0 |
| 43 | 9.37 497 | 52 | 9.38 754 | 54 | 0.61 246 | 9.98 743 | 3 | 17 | 40 | 34.0 | 2.7 | 2.0 | 1.3 |
| 44 | 9.37 549 | 51 | 9.38 808 | 55 | 0.61 192 | 9.98 740 | 3 | 16 | 50 | 42.5 | 3.3 | 2.5 | 1.7 |
| 45 | 9.37 600 | 52 | 9.38 863 | 55 | 0.61 137 | 9.98 737 | 3 | 15 | | | | | |
| 46 | 9.37 652 | 51 | 9.38 918 | 54 | 0.61 082 | 9.98 734 | 3 | 14 | | | | | |
| 47 | 9.37 703 | 52 | 9.38 972 | 55 | 0.61 028 | 9.98 731 | 3 | 13 | | | | | |
| 48 | 9.37 755 | 51 | 9.39 027 | 55 | 0.60 973 | 9.98 728 | 3 | 12 | | | | | |
| 49 | 9.37 806 | 52 | 9.39 082 | 54 | 0.60 918 | 9.98 725 | 3 | 11 | | | | | |
| 50 | 9.37 858 | 51 | 9.39 136 | 54 | 0.60 864 | 9.98 722 | 3 | 10 | | | | | |
| 51 | 9.37 909 | 51 | 9.39 190 | 55 | 0.60 810 | 9.98 719 | 3 | 9 | | | | | |
| 52 | 9.37 960 | 51 | 9.39 245 | 54 | 0.60 755 | 9.98 715 | 4 | 8 | | | | | |
| 53 | 9.38 011 | 51 | 9.39 299 | 54 | 0.60 701 | 9.98 712 | 3 | 7 | | | | | |
| 54 | 9.38 062 | 51 | 9.39 353 | 54 | 0.60 647 | 9.98 709 | 3 | 6 | | | | | |
| 55 | 9.38 113 | 51 | 9.39 407 | 54 | 0.60 593 | 9.98 706 | 3 | 5 | | | | | |
| 56 | 9.38 164 | 51 | 9.39 461 | 54 | 0.60 539 | 9.98 703 | 3 | 4 | | | | | |
| 57 | 9.38 215 | 51 | 9.39 515 | 54 | 0.60 485 | 9.98 700 | 3 | 3 | | | | | |
| 58 | 9.38 266 | 51 | 9.39 569 | 54 | 0.60 431 | 9.98 697 | 3 | 2 | | | | | |
| 59 | 9.38 317 | 51 | 9.39 623 | 54 | 0.60 377 | 9.98 694 | 3 | 1 | | | | | |
| 60 | 9.38 368 | 51 | 9.39 677 | 54 | 0.60 323 | 9.98 690 | 4 | 0 | | | | | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P | P | | | |

| | | | | | | | | P P | | | |
|----|----------|------|----------|----|----------|----------|---|-----|-----|------|------|
| | L Sin | d | L Tan | ed | L Cot | L Cos | d | | | | |
| 0 | 0.38 368 | 50 | 0.39 677 | 54 | 0.60 323 | 9.98 690 | 3 | 60 | 54 | 53 | 52 |
| 1 | 9.38 418 | 51 | 9.39 731 | 54 | 0.60 269 | 9.98 687 | 3 | 59 | 1 | 0.9 | 0.9 |
| 2 | 9.38 469 | 51 | 9.39 785 | 53 | 0.60 215 | 9.98 684 | 3 | 58 | 2 | 1.8 | 1.7 |
| 3 | 9.38 519 | 51 | 9.39 838 | 54 | 0.60 162 | 9.98 681 | 3 | 57 | 3 | 2.7 | 2.6 |
| 4 | 9.38 570 | 50 | 9.39 892 | 53 | 0.60 108 | 9.98 678 | 3 | 56 | 4 | 3.6 | 3.5 |
| 5 | 9.38 620 | 50 | 9.39 945 | 54 | 0.60 055 | 9.98 675 | 3 | 55 | 5 | 4.5 | 4.4 |
| 6 | 9.38 670 | 51 | 9.39 999 | 53 | 0.60 001 | 9.98 671 | 3 | 54 | 6 | 5.4 | 5.3 |
| 7 | 9.38 721 | 50 | 9.40 052 | 54 | 0.59 948 | 9.98 668 | 3 | 53 | 7 | 6.3 | 6.2 |
| 8 | 9.38 771 | 50 | 9.40 106 | 53 | 0.59 894 | 9.98 665 | 3 | 52 | 8 | 7.2 | 7.1 |
| 9 | 9.38 821 | 50 | 9.40 159 | 53 | 0.59 841 | 9.98 662 | 3 | 51 | 9 | 8.1 | 8.0 |
| 10 | 9.38 871 | 50 | 9.40 212 | 54 | 0.59 788 | 9.98 659 | 3 | 50 | 10 | 9.0 | 8.8 |
| 11 | 9.38 921 | 50 | 9.40 266 | 53 | 0.59 734 | 9.98 656 | 4 | 49 | 20 | 18.0 | 17.7 |
| 12 | 9.38 971 | 50 | 9.40 319 | 53 | 0.59 681 | 9.98 652 | 3 | 48 | 30 | 27.0 | 26.5 |
| 13 | 9.39 021 | 50 | 9.40 372 | 53 | 0.59 628 | 9.98 649 | 3 | 47 | 40 | 36.0 | 35.3 |
| 14 | 9.39 071 | 50 | 9.40 425 | 53 | 0.59 575 | 9.98 646 | 3 | 46 | 50 | 45.0 | 44.2 |
| 15 | 9.39 121 | 49 | 9.40 478 | 53 | 0.59 522 | 9.98 643 | 3 | 45 | | 51 | 50 |
| 16 | 9.39 170 | 50 | 9.40 531 | 53 | 0.59 469 | 9.98 640 | 4 | 44 | 1 | 0.8 | 0.8 |
| 17 | 9.39 220 | 50 | 9.40 584 | 52 | 0.59 416 | 9.98 636 | 3 | 43 | 2 | 1.7 | 1.7 |
| 18 | 9.39 270 | 49 | 9.40 636 | 53 | 0.59 364 | 9.98 633 | 3 | 42 | 3 | 2.6 | 2.5 |
| 19 | 9.39 319 | 50 | 9.40 689 | 53 | 0.59 311 | 9.98 630 | 3 | 41 | 4 | 3.4 | 3.3 |
| 20 | 9.39 369 | 49 | 9.40 742 | 53 | 0.59 258 | 9.98 627 | 4 | 40 | 5 | 4.2 | 4.1 |
| 21 | 9.39 418 | 49 | 9.40 795 | 52 | 0.59 205 | 9.98 623 | 3 | 39 | 6 | 5.1 | 5.0 |
| 22 | 9.39 467 | 50 | 9.40 847 | 53 | 0.59 153 | 9.98 620 | 3 | 38 | 7 | 6.0 | 5.8 |
| 23 | 9.39 517 | 49 | 9.40 900 | 52 | 0.59 100 | 9.98 617 | 3 | 37 | 8 | 6.8 | 6.7 |
| 24 | 9.39 566 | 49 | 9.40 952 | 53 | 0.59 048 | 9.98 614 | 4 | 36 | 9 | 7.6 | 7.5 |
| 25 | 9.39 615 | 49 | 9.41 005 | 52 | 0.58 995 | 9.98 610 | 3 | 35 | 10 | 8.5 | 8.3 |
| 26 | 9.39 664 | 49 | 9.41 057 | 52 | 0.58 943 | 9.98 607 | 3 | 34 | 20 | 17.0 | 16.7 |
| 27 | 9.39 713 | 49 | 9.41 109 | 52 | 0.58 891 | 9.98 604 | 3 | 33 | 30 | 25.5 | 25.0 |
| 28 | 9.39 762 | 49 | 9.41 161 | 53 | 0.58 839 | 9.98 601 | 4 | 32 | 40 | 34.0 | 33.3 |
| 29 | 9.39 811 | 49 | 9.41 214 | 52 | 0.58 786 | 9.98 597 | 3 | 31 | 50 | 42.5 | 41.7 |
| 30 | 9.39 860 | 49 | 9.41 266 | 52 | 0.58 734 | 9.98 594 | 3 | 30 | | 48 | 47 |
| 31 | 9.39 909 | 49 | 9.41 318 | 52 | 0.58 682 | 9.98 591 | 3 | 29 | 1 | 0.8 | 0.8 |
| 32 | 9.39 958 | 48 | 9.41 370 | 52 | 0.58 630 | 9.98 588 | 4 | 28 | 2 | 1.6 | 1.6 |
| 33 | 9.40 006 | 49 | 9.41 422 | 52 | 0.58 578 | 9.98 584 | 3 | 27 | 3 | 2.4 | 2.4 |
| 34 | 9.40 055 | 48 | 9.41 474 | 52 | 0.58 526 | 9.98 581 | 3 | 26 | 4 | 3.2 | 3.1 |
| 35 | 9.40 103 | 49 | 9.41 526 | 52 | 0.58 474 | 9.98 578 | 4 | 25 | 5 | 4.0 | 3.9 |
| 36 | 9.40 152 | 48 | 9.41 578 | 51 | 0.58 422 | 9.98 574 | 3 | 24 | 6 | 4.8 | 4.7 |
| 37 | 9.40 200 | 49 | 9.41 629 | 52 | 0.58 371 | 9.98 571 | 3 | 23 | 7 | 5.6 | 5.5 |
| 38 | 9.40 249 | 48 | 9.41 681 | 52 | 0.58 319 | 9.98 568 | 3 | 22 | 8 | 6.4 | 6.3 |
| 39 | 9.40 297 | 49 | 9.41 733 | 51 | 0.58 267 | 9.98 565 | 4 | 21 | 9 | 7.2 | 7.0 |
| 40 | 9.40 346 | 48 | 9.41 784 | 52 | 0.58 216 | 9.98 561 | 3 | 20 | 10 | 8.0 | 7.8 |
| 41 | 9.40 394 | 48 | 9.41 836 | 51 | 0.58 164 | 9.98 558 | 3 | 19 | 20 | 16.0 | 15.7 |
| 42 | 9.40 442 | 48 | 9.41 887 | 52 | 0.58 113 | 9.98 555 | 4 | 18 | 30 | 24.0 | 23.5 |
| 43 | 9.40 490 | 48 | 9.41 939 | 51 | 0.58 061 | 9.98 551 | 3 | 17 | 40 | 32.0 | 31.3 |
| 44 | 9.40 538 | 48 | 9.41 990 | 51 | 0.58 010 | 9.98 548 | 3 | 16 | 50 | 40.0 | 39.2 |
| 45 | 9.40 586 | 48 | 9.42 041 | 52 | 0.57 959 | 9.98 545 | 4 | 15 | | | |
| 46 | 9.40 634 | 48 | 9.42 093 | 51 | 0.57 907 | 9.98 541 | 3 | 14 | | | |
| 47 | 9.40 682 | 48 | 9.42 144 | 51 | 0.57 856 | 9.98 538 | 3 | 13 | | | |
| 48 | 9.40 730 | 48 | 9.42 195 | 51 | 0.57 805 | 9.98 535 | 4 | 12 | | | |
| 49 | 9.40 778 | 47 | 9.42 246 | 51 | 0.57 754 | 9.98 531 | 3 | 11 | | | |
| 50 | 9.40 825 | 48 | 9.42 297 | 51 | 0.57 703 | 9.98 528 | 3 | 10 | | | |
| 51 | 9.40 873 | 48 | 9.42 348 | 51 | 0.57 652 | 9.98 525 | 4 | 9 | | | |
| 52 | 9.40 921 | 47 | 9.42 399 | 51 | 0.57 601 | 9.98 521 | 3 | 8 | | | |
| 53 | 9.40 968 | 48 | 9.42 450 | 51 | 0.57 550 | 9.98 518 | 3 | 7 | | | |
| 54 | 9.41 016 | 47 | 9.42 501 | 51 | 0.57 499 | 9.98 515 | 4 | 6 | | | |
| 55 | 9.41 063 | 48 | 9.42 552 | 51 | 0.57 448 | 9.98 511 | 3 | 5 | | | |
| 56 | 9.41 111 | 47 | 9.42 603 | 50 | 0.57 397 | 9.98 508 | 3 | 4 | | | |
| 57 | 9.41 158 | 47 | 9.42 653 | 51 | 0.57 347 | 9.98 505 | 4 | 3 | | | |
| 58 | 9.41 205 | 47 | 9.42 704 | 51 | 0.57 296 | 9.98 501 | 3 | 2 | | | |
| 59 | 9.41 252 | 48 | 9.42 755 | 50 | 0.57 245 | 9.98 498 | 4 | 1 | | | |
| 60 | 9.41 300 | | 9.42 805 | | 0.57 195 | 9.98 494 | | 0 | | | |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P P | | |
| | *105 | 255° | *315° | | | | | | | | |

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|---|----|----|------|
| 0 | 9.41 300 | | 9.42 805 | 51 | 0.57 195 | 9.98 494 | 3 | 60 | | |
| 1 | 9.41 347 | 47 | 9.42 856 | 50 | 0.57 144 | 9.98 491 | 3 | 59 | 51 | 50 |
| 2 | 9.41 394 | 47 | 9.42 906 | 51 | 0.57 094 | 9.98 488 | 4 | 58 | 1 | 0.8 |
| 3 | 9.41 441 | 47 | 9.42 957 | 50 | 0.57 043 | 9.98 484 | 4 | 57 | 2 | 1.7 |
| 4 | 9.41 488 | 47 | 9.43 007 | 50 | 0.56 993 | 9.98 481 | 4 | 56 | 3 | 2.6 |
| 5 | 9.41 535 | 47 | 9.43 057 | 51 | 0.56 943 | 9.98 477 | 4 | 55 | 4 | 3.4 |
| 6 | 9.41 582 | 46 | 9.43 108 | 50 | 0.56 892 | 9.98 474 | 3 | 54 | 5 | 4.2 |
| 7 | 9.41 628 | 47 | 9.43 158 | 50 | 0.56 842 | 9.98 471 | 4 | 53 | 6 | 5.1 |
| 8 | 9.41 675 | 47 | 9.43 208 | 50 | 0.56 792 | 9.98 467 | 4 | 52 | 7 | 6.0 |
| 9 | 9.41 722 | 47 | 9.43 258 | 50 | 0.56 742 | 9.98 464 | 3 | 51 | 8 | 6.8 |
| 10 | 9.41 768 | 46 | 9.43 308 | 50 | 0.56 692 | 9.98 460 | 4 | 50 | 9 | 7.6 |
| 11 | 9.41 815 | 47 | 9.43 358 | 50 | 0.56 642 | 9.98 457 | 3 | 49 | 10 | 8.5 |
| 12 | 9.41 861 | 46 | 9.43 408 | 50 | 0.56 592 | 9.98 453 | 4 | 48 | 20 | 17.0 |
| 13 | 9.41 908 | 47 | 9.43 458 | 50 | 0.56 542 | 9.98 450 | 3 | 47 | 30 | 25.5 |
| 14 | 9.41 954 | 46 | 9.43 508 | 50 | 0.56 492 | 9.98 447 | 4 | 46 | 40 | 34.0 |
| 15 | 9.42 001 | 47 | 9.43 558 | 49 | 0.56 442 | 9.98 443 | 3 | 45 | 50 | 42.5 |
| 16 | 9.42 047 | 46 | 9.43 607 | 50 | 0.56 393 | 9.98 440 | 4 | 44 | | |
| 17 | 9.42 093 | 47 | 9.43 657 | 50 | 0.56 343 | 9.98 436 | 3 | 43 | 48 | 47 |
| 18 | 9.42 140 | 47 | 9.43 707 | 49 | 0.56 293 | 9.98 433 | 4 | 42 | 1 | 0.8 |
| 19 | 9.42 186 | 46 | 9.43 756 | 50 | 0.56 244 | 9.98 429 | 3 | 41 | 2 | 1.6 |
| 20 | 9.42 232 | 46 | 9.43 806 | 49 | 0.56 194 | 9.98 426 | 4 | 40 | 3 | 2.4 |
| 21 | 9.42 278 | 46 | 9.43 855 | 50 | 0.56 145 | 9.98 422 | 3 | 39 | 4 | 3.2 |
| 22 | 9.42 324 | 46 | 9.43 905 | 49 | 0.56 095 | 9.98 419 | 4 | 38 | 5 | 4.0 |
| 23 | 9.42 370 | 46 | 9.43 954 | 50 | 0.56 046 | 9.98 415 | 3 | 37 | 6 | 4.8 |
| 24 | 9.42 416 | 46 | 9.44 004 | 49 | 0.55 996 | 9.98 412 | 4 | 36 | 7 | 5.6 |
| 25 | 9.42 461 | 45 | 9.44 053 | 49 | 0.55 947 | 9.98 409 | 3 | 35 | 8 | 6.4 |
| 26 | 9.42 507 | 46 | 9.44 102 | 49 | 0.55 898 | 9.98 405 | 4 | 34 | 9 | 7.2 |
| 27 | 9.42 553 | 46 | 9.44 151 | 50 | 0.55 849 | 9.98 402 | 3 | 33 | 10 | 8.0 |
| 28 | 9.42 599 | 45 | 9.44 201 | 49 | 0.55 799 | 9.98 398 | 4 | 32 | 20 | 16.0 |
| 29 | 9.42 644 | 46 | 9.44 250 | 49 | 0.55 750 | 9.98 395 | 3 | 31 | 30 | 24.0 |
| 30 | 9.42 690 | 45 | 9.44 299 | 49 | 0.55 701 | 9.98 391 | 4 | 30 | 40 | 32.0 |
| 31 | 9.42 735 | 46 | 9.44 348 | 49 | 0.55 652 | 9.98 388 | 3 | 29 | 50 | 40.0 |
| 32 | 9.42 781 | 45 | 9.44 397 | 49 | 0.55 603 | 9.98 384 | 4 | 28 | | |
| 33 | 9.42 826 | 46 | 9.44 446 | 49 | 0.55 554 | 9.98 381 | 3 | 27 | 1 | 0.8 |
| 34 | 9.42 872 | 45 | 9.44 495 | 49 | 0.55 505 | 9.98 377 | 4 | 26 | 2 | 1.5 |
| 35 | 9.42 917 | 45 | 9.44 544 | 48 | 0.55 456 | 9.98 373 | 3 | 25 | 3 | 2.2 |
| 36 | 9.42 962 | 46 | 9.44 592 | 49 | 0.55 408 | 9.98 370 | 4 | 24 | 4 | 3.0 |
| 37 | 9.43 008 | 45 | 9.44 641 | 49 | 0.55 359 | 9.98 366 | 3 | 23 | 5 | 3.8 |
| 38 | 9.43 053 | 45 | 9.44 690 | 48 | 0.55 310 | 9.98 363 | 4 | 22 | 6 | 4.5 |
| 39 | 9.43 098 | 45 | 9.44 738 | 49 | 0.55 262 | 9.98 359 | 3 | 21 | 7 | 5.2 |
| 40 | 9.43 143 | 45 | 9.44 787 | 49 | 0.55 213 | 9.98 356 | 4 | 20 | 8 | 6.0 |
| 41 | 9.43 188 | 45 | 9.44 836 | 48 | 0.55 164 | 9.98 352 | 3 | 19 | 9 | 6.8 |
| 42 | 9.43 233 | 45 | 9.44 884 | 49 | 0.55 116 | 9.98 349 | 4 | 18 | 10 | 7.5 |
| 43 | 9.43 278 | 45 | 9.44 933 | 48 | 0.55 067 | 9.98 345 | 3 | 17 | 20 | 15.0 |
| 44 | 9.43 323 | 44 | 9.44 981 | 48 | 0.55 019 | 9.98 342 | 4 | 16 | 30 | 22.5 |
| 45 | 9.43 367 | 45 | 9.45 029 | 49 | 0.54 971 | 9.98 338 | 3 | 15 | 40 | 30.0 |
| 46 | 9.43 412 | 45 | 9.45 078 | 48 | 0.54 922 | 9.98 334 | 4 | 14 | 50 | 37.5 |
| 47 | 9.43 457 | 45 | 9.45 126 | 48 | 0.54 874 | 9.98 331 | 3 | 13 | | |
| 48 | 9.43 502 | 44 | 9.45 174 | 48 | 0.54 826 | 9.98 327 | 4 | 12 | 4 | 4 |
| 49 | 9.43 546 | 45 | 9.45 222 | 49 | 0.54 778 | 9.98 324 | 3 | 11 | 50 | 49 |
| 50 | 9.43 591 | 44 | 9.45 271 | 48 | 0.54 729 | 9.98 320 | 4 | 10 | | |
| 51 | 9.43 635 | 45 | 9.45 319 | 48 | 0.54 681 | 9.98 317 | 3 | 9 | 0 | 6.2 |
| 52 | 9.43 680 | 44 | 9.45 367 | 48 | 0.54 633 | 9.98 313 | 4 | 8 | 1 | 6.1 |
| 53 | 9.43 724 | 45 | 9.45 415 | 48 | 0.54 585 | 9.98 309 | 3 | 7 | 2 | 6.0 |
| 54 | 9.43 769 | 44 | 9.45 463 | 48 | 0.54 537 | 9.98 306 | 4 | 6 | 3 | 5.9 |
| 55 | 9.43 813 | 44 | 9.45 511 | 48 | 0.54 489 | 9.98 302 | 3 | 5 | 4 | 18.8 |
| 56 | 9.43 857 | 44 | 9.45 559 | 47 | 0.54 441 | 9.98 299 | 4 | 4 | 5 | 18.4 |
| 57 | 9.43 901 | 45 | 9.45 606 | 48 | 0.54 394 | 9.98 295 | 3 | 3 | 6 | 18.0 |
| 58 | 9.43 946 | 44 | 9.45 654 | 48 | 0.54 346 | 9.98 291 | 4 | 2 | 7 | 30.6 |
| 59 | 9.43 990 | 44 | 9.45 702 | 48 | 0.54 298 | 9.98 288 | 3 | 1 | 8 | 30.0 |
| 60 | 9.44 034 | | 9.45 750 | | 0.54 250 | 9.98 284 | 4 | 0 | 9 | 42.9 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P | | | |
|----|----------|----|----------|-----|----------|----------|---|----|-----|------|------|------|
| 0 | 9.44 034 | | 9.45 750 | | 0.54 250 | 9.98 284 | | 60 | | | | |
| 1 | 9.44 078 | 44 | 9.45 797 | 47 | 0.54 203 | 9.98 281 | 3 | 59 | 48 | 47 | 46 | |
| 2 | 9.44 122 | 44 | 9.45 845 | 48 | 0.54 155 | 9.98 277 | 4 | 58 | 1 | 0.8 | 0.8 | 0.8 |
| 3 | 9.44 166 | 44 | 9.45 892 | 47 | 0.54 108 | 9.98 273 | 4 | 57 | 2 | 1.6 | 1.6 | 1.5 |
| 4 | 9.44 210 | 44 | 9.45 940 | 48 | 0.54 060 | 9.98 270 | 3 | 56 | 3 | 2.4 | 2.4 | 2.3 |
| 5 | 9.44 253 | 43 | 9.45 987 | 47 | 0.54 013 | 9.98 266 | 4 | 55 | 4 | 3.2 | 3.1 | 3.1 |
| 6 | 9.44 297 | 44 | 9.46 035 | 48 | 0.53 965 | 9.98 262 | 4 | 54 | 5 | 4.0 | 3.9 | 3.8 |
| 7 | 9.44 341 | 44 | 9.46 082 | 47 | 0.53 918 | 9.98 259 | 3 | 53 | 6 | 4.8 | 4.7 | 4.6 |
| 8 | 9.44 385 | 44 | 9.46 130 | 48 | 0.53 870 | 9.98 255 | 4 | 52 | 7 | 5.6 | 5.5 | 5.4 |
| 9 | 9.44 428 | 43 | 9.46 177 | 47 | 0.53 823 | 9.98 251 | 4 | 51 | 8 | 6.4 | 6.3 | 6.1 |
| 10 | 9.44 472 | 44 | 9.46 224 | 47 | 0.53 776 | 9.98 248 | 3 | 50 | 9 | 7.2 | 7.0 | 6.9 |
| 11 | 9.44 516 | 44 | 9.46 271 | 47 | 0.53 729 | 9.98 244 | 4 | 49 | 10 | 8.0 | 7.8 | 7.7 |
| 12 | 9.44 559 | 43 | 9.46 319 | 48 | 0.53 681 | 9.98 240 | 4 | 48 | 20 | 16.0 | 15.7 | 15.3 |
| 13 | 9.44 602 | 43 | 9.46 366 | 47 | 0.53 634 | 9.98 237 | 3 | 47 | 30 | 24.0 | 23.5 | 23.0 |
| 14 | 9.44 646 | 44 | 9.46 413 | 47 | 0.53 587 | 9.98 233 | 4 | 46 | 40 | 32.0 | 31.3 | 30.7 |
| 15 | 9.44 689 | 43 | 9.46 460 | 47 | 0.53 540 | 9.98 229 | 4 | 45 | 50 | 40.0 | 39.2 | 38.3 |
| 16 | 9.44 733 | 44 | 9.46 507 | 47 | 0.53 493 | 9.98 226 | 3 | 44 | | 45 | 44 | 43 |
| 17 | 9.44 776 | 43 | 9.46 554 | 47 | 0.53 446 | 9.98 222 | 4 | 43 | 1 | 0.8 | 0.7 | 0.7 |
| 18 | 9.44 819 | 43 | 9.46 601 | 47 | 0.53 399 | 9.98 218 | 4 | 42 | 2 | 1.5 | 1.5 | 1.4 |
| 19 | 9.44 862 | 43 | 9.46 648 | 47 | 0.53 352 | 9.98 215 | 3 | 41 | 3 | 2.2 | 2.2 | 2.2 |
| 20 | 9.44 905 | 43 | 9.46 694 | 46 | 0.53 306 | 9.98 211 | 4 | 40 | 4 | 3.0 | 2.9 | 2.9 |
| 21 | 9.44 948 | 43 | 9.46 741 | 47 | 0.53 259 | 9.98 207 | 4 | 39 | 5 | 3.8 | 3.7 | 3.6 |
| 22 | 9.44 992 | 44 | 9.46 788 | 47 | 0.53 212 | 9.98 204 | 3 | 38 | 6 | 4.5 | 4.4 | 4.3 |
| 23 | 9.45 035 | 43 | 9.46 835 | 47 | 0.53 165 | 9.98 200 | 4 | 37 | 7 | 5.2 | 5.1 | 5.0 |
| 24 | 9.45 077 | 42 | 9.46 881 | 46 | 0.53 119 | 9.98 196 | 4 | 36 | 8 | 6.0 | 5.9 | 5.7 |
| 25 | 9.45 120 | 43 | 9.46 928 | 47 | 0.53 072 | 9.98 192 | 4 | 35 | 9 | 6.8 | 6.6 | 6.4 |
| 26 | 9.45 163 | 43 | 9.46 975 | 47 | 0.53 025 | 9.98 189 | 3 | 34 | 10 | 7.5 | 7.3 | 7.2 |
| 27 | 9.45 206 | 43 | 9.47 021 | 46 | 0.52 979 | 9.98 185 | 4 | 33 | 20 | 15.0 | 14.7 | 14.3 |
| 28 | 9.45 249 | 43 | 9.47 068 | 47 | 0.52 932 | 9.98 181 | 4 | 32 | 30 | 22.5 | 22.0 | 21.5 |
| 29 | 9.45 292 | 42 | 9.47 114 | 46 | 0.52 886 | 9.98 177 | 4 | 31 | 40 | 30.0 | 29.3 | 28.7 |
| 30 | 9.45 334 | 43 | 9.47 160 | 46 | 0.52 840 | 9.98 174 | 3 | 30 | 50 | 37.5 | 36.7 | 35.8 |
| 31 | 9.45 377 | 42 | 9.47 207 | 47 | 0.52 793 | 9.98 170 | 4 | 29 | | 42 | 41 | 4 |
| 32 | 9.45 419 | 42 | 9.47 253 | 46 | 0.52 747 | 9.98 166 | 4 | 28 | 1 | 0.7 | 0.7 | 0.1 |
| 33 | 9.45 462 | 43 | 9.47 299 | 46 | 0.52 701 | 9.98 162 | 4 | 27 | 2 | 1.4 | 1.4 | 0.1 |
| 34 | 9.45 504 | 42 | 9.47 346 | 47 | 0.52 654 | 9.98 159 | 3 | 26 | 3 | 2.1 | 2.0 | 0.2 |
| 35 | 9.45 547 | 43 | 9.47 392 | 46 | 0.52 608 | 9.98 155 | 4 | 25 | 4 | 2.8 | 2.7 | 0.3 |
| 36 | 9.45 589 | 42 | 9.47 438 | 46 | 0.52 562 | 9.98 151 | 4 | 24 | 5 | 3.5 | 3.4 | 0.3 |
| 37 | 9.45 632 | 43 | 9.47 484 | 46 | 0.52 516 | 9.98 147 | 4 | 23 | 6 | 4.2 | 4.1 | 0.4 |
| 38 | 9.45 674 | 42 | 9.47 530 | 46 | 0.52 470 | 9.98 144 | 3 | 22 | 7 | 4.9 | 4.8 | 0.5 |
| 39 | 9.45 716 | 42 | 9.47 576 | 46 | 0.52 424 | 9.98 140 | 4 | 21 | 8 | 5.6 | 5.5 | 0.5 |
| 40 | 9.45 758 | 42 | 9.47 622 | 46 | 0.52 378 | 9.98 136 | 4 | 20 | 9 | 6.3 | 6.2 | 0.6 |
| 41 | 9.45 801 | 43 | 9.47 668 | 46 | 0.52 332 | 9.98 132 | 4 | 19 | 10 | 7.0 | 6.8 | 0.7 |
| 42 | 9.45 843 | 42 | 9.47 714 | 46 | 0.52 286 | 9.98 129 | 3 | 18 | 20 | 14.0 | 13.7 | 1.3 |
| 43 | 9.45 885 | 42 | 9.47 760 | 46 | 0.52 240 | 9.98 125 | 4 | 17 | 30 | 21.0 | 20.5 | 2.0 |
| 44 | 9.45 927 | 42 | 9.47 806 | 46 | 0.52 194 | 9.98 121 | 4 | 16 | 40 | 28.0 | 27.3 | 2.7 |
| 45 | 9.45 969 | 42 | 9.47 852 | 46 | 0.52 148 | 9.98 117 | 4 | 15 | 50 | 35.0 | 34.2 | 3.3 |
| 46 | 9.46 011 | 42 | 9.47 897 | 45 | 0.52 103 | 9.98 113 | 4 | 14 | | | | |
| 47 | 9.46 053 | 42 | 9.47 943 | 46 | 0.52 057 | 9.98 110 | 3 | 13 | | 4 | 4 | 4 |
| 48 | 9.46 095 | 42 | 9.47 989 | 46 | 0.52 011 | 9.98 106 | 4 | 12 | | 48 | 47 | 46 |
| 49 | 9.46 136 | 41 | 9.48 035 | 46 | 0.51 965 | 9.98 102 | 4 | 11 | | | | |
| 50 | 9.46 178 | 42 | 9.48 080 | 45 | 0.51 920 | 9.98 098 | 4 | 10 | 0 | 6.0 | 5.9 | 5.8 |
| 51 | 9.46 220 | 42 | 9.48 126 | 46 | 0.51 874 | 9.98 094 | 4 | 9 | 1 | 18.0 | 17.6 | 17.2 |
| 52 | 9.46 262 | 42 | 9.48 171 | 45 | 0.51 829 | 9.98 090 | 4 | 8 | 2 | 30.0 | 29.4 | 28.8 |
| 53 | 9.46 303 | 41 | 9.48 217 | 46 | 0.51 783 | 9.98 087 | 3 | 7 | 3 | 42.0 | 41.1 | 40.2 |
| 54 | 9.46 345 | 42 | 9.48 262 | 45 | 0.51 738 | 9.98 083 | 4 | 6 | 4 | | | |
| 55 | 9.46 386 | 41 | 9.48 307 | 45 | 0.51 693 | 9.98 079 | 4 | 5 | | 3 | 3 | 3 |
| 56 | 9.46 428 | 42 | 9.48 353 | 46 | 0.51 647 | 9.98 075 | 4 | 4 | | 48 | 47 | 46 |
| 57 | 9.46 469 | 41 | 9.48 398 | 45 | 0.51 602 | 9.98 071 | 4 | 3 | | | | |
| 58 | 9.46 511 | 42 | 9.48 443 | 45 | 0.51 557 | 9.98 067 | 4 | 2 | 0 | 8.0 | 7.8 | 7.7 |
| 59 | 9.46 552 | 41 | 9.48 489 | 46 | 0.51 511 | 9.98 063 | 4 | 1 | 1 | 24.0 | 23.5 | 23.0 |
| 60 | 9.46 594 | 42 | 9.48 534 | 45 | 0.51 466 | 9.98 060 | 3 | 0 | 2 | 40.0 | 39.2 | 38.3 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P | | | |

| ° | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P | P | P |
|----|----------|----|----------|-----|----------|----------|---|----|----|------|------|
| 0 | 9.46 594 | | 9.48 534 | | 0.51 466 | 9.98 060 | | 60 | 45 | 44 | 43 |
| 1 | 9.46 635 | 41 | 9.48 579 | 45 | 0.51 421 | 9.98 056 | 4 | 59 | 1 | 0.8 | 0.7 |
| 2 | 9.46 676 | 41 | 9.48 624 | 45 | 0.51 376 | 9.98 052 | 4 | 58 | 2 | 1.5 | 1.5 |
| 3 | 9.46 717 | 41 | 9.48 669 | 45 | 0.51 331 | 9.98 048 | 4 | 57 | 3 | 2.2 | 2.2 |
| 4 | 9.46 758 | 41 | 9.48 714 | 45 | 0.51 286 | 9.98 044 | 4 | 56 | 4 | 3.0 | 2.9 |
| 5 | 9.46 800 | 42 | 9.48 759 | 45 | 0.51 241 | 9.98 040 | 4 | 55 | 5 | 3.8 | 3.7 |
| 6 | 9.46 841 | 41 | 9.48 804 | 45 | 0.51 196 | 9.98 036 | 4 | 54 | 6 | 4.5 | 4.4 |
| 7 | 9.46 882 | 41 | 9.48 849 | 45 | 0.51 151 | 9.98 032 | 4 | 53 | 7 | 5.2 | 5.1 |
| 8 | 9.46 923 | 41 | 9.48 894 | 45 | 0.51 106 | 9.98 029 | 3 | 52 | 8 | 6.0 | 5.9 |
| 9 | 9.46 964 | 41 | 9.48 939 | 45 | 0.51 061 | 9.98 025 | 4 | 51 | 9 | 6.8 | 6.6 |
| 10 | 9.47 005 | 40 | 9.48 984 | 45 | 0.51 016 | 9.98 021 | 4 | 50 | 10 | 7.5 | 7.3 |
| 11 | 9.47 045 | 40 | 9.49 029 | 45 | 0.50 971 | 9.98 017 | 4 | 49 | 20 | 15.0 | 14.7 |
| 12 | 9.47 086 | 41 | 9.49 073 | 44 | 0.50 927 | 9.98 013 | 4 | 48 | 30 | 22.5 | 22.0 |
| 13 | 9.47 127 | 41 | 9.49 118 | 45 | 0.50 882 | 9.98 009 | 4 | 47 | 40 | 30.0 | 29.3 |
| 14 | 9.47 168 | 41 | 9.49 163 | 45 | 0.50 837 | 9.98 005 | 4 | 46 | 50 | 37.5 | 36.7 |
| 15 | 9.47 209 | 41 | 9.49 207 | 44 | 0.50 793 | 9.98 001 | 4 | 45 | | 42 | 41 |
| 16 | 9.47 249 | 40 | 9.49 252 | 44 | 0.50 748 | 9.97 997 | 4 | 44 | 1 | 0.7 | 0.7 |
| 17 | 9.47 290 | 40 | 9.49 296 | 45 | 0.50 704 | 9.97 993 | 4 | 43 | 2 | 1.4 | 1.4 |
| 18 | 9.47 330 | 41 | 9.49 341 | 45 | 0.50 659 | 9.97 989 | 4 | 42 | 3 | 2.1 | 2.0 |
| 19 | 9.47 371 | 40 | 9.49 385 | 44 | 0.50 615 | 9.97 986 | 3 | 41 | 4 | 2.8 | 2.7 |
| 20 | 9.47 411 | 41 | 9.49 430 | 44 | 0.50 570 | 9.97 982 | 4 | 40 | 5 | 3.5 | 3.4 |
| 21 | 9.47 452 | 40 | 9.49 474 | 45 | 0.50 526 | 9.97 978 | 4 | 39 | 6 | 4.2 | 4.1 |
| 22 | 9.47 492 | 41 | 9.49 519 | 45 | 0.50 481 | 9.97 974 | 4 | 38 | 7 | 4.9 | 4.8 |
| 23 | 9.47 533 | 40 | 9.49 563 | 44 | 0.50 437 | 9.97 970 | 4 | 37 | 8 | 5.6 | 5.5 |
| 24 | 9.47 573 | 40 | 9.49 607 | 45 | 0.50 393 | 9.97 966 | 4 | 36 | 9 | 6.3 | 6.2 |
| 25 | 9.47 613 | 41 | 9.49 652 | 45 | 0.50 348 | 9.97 962 | 4 | 35 | 10 | 7.0 | 6.8 |
| 26 | 9.47 654 | 40 | 9.49 696 | 44 | 0.50 304 | 9.97 958 | 4 | 34 | 20 | 14.0 | 13.7 |
| 27 | 9.47 694 | 40 | 9.49 740 | 44 | 0.50 260 | 9.97 954 | 4 | 33 | 30 | 21.0 | 20.5 |
| 28 | 9.47 734 | 40 | 9.49 784 | 44 | 0.50 216 | 9.97 950 | 4 | 32 | 40 | 28.0 | 27.3 |
| 29 | 9.47 774 | 40 | 9.49 828 | 44 | 0.50 172 | 9.97 946 | 4 | 31 | 50 | 35.0 | 34.2 |
| 30 | 9.47 814 | 40 | 9.49 872 | 44 | 0.50 128 | 9.97 942 | 4 | 30 | | 39 | 5 |
| 31 | 9.47 854 | 40 | 9.49 916 | 44 | 0.50 084 | 9.97 938 | 4 | 29 | 1 | 0.6 | 0.1 |
| 32 | 9.47 894 | 40 | 9.49 960 | 44 | 0.50 040 | 9.97 934 | 4 | 28 | 2 | 1.3 | 0.2 |
| 33 | 9.47 934 | 40 | 9.50 004 | 44 | 0.49 996 | 9.97 930 | 4 | 27 | 3 | 2.0 | 0.2 |
| 34 | 9.47 974 | 40 | 9.50 048 | 44 | 0.49 952 | 9.97 926 | 4 | 26 | 4 | 2.6 | 0.3 |
| 35 | 9.48 014 | 40 | 9.50 092 | 44 | 0.49 908 | 9.97 922 | 4 | 25 | 5 | 3.2 | 0.4 |
| 36 | 9.48 054 | 40 | 9.50 136 | 44 | 0.49 864 | 9.97 918 | 4 | 24 | 6 | 3.9 | 0.5 |
| 37 | 9.48 094 | 40 | 9.50 180 | 44 | 0.49 820 | 9.97 914 | 4 | 23 | 7 | 4.6 | 0.6 |
| 38 | 9.48 133 | 39 | 9.50 223 | 43 | 0.49 777 | 9.97 910 | 4 | 22 | 8 | 5.2 | 0.7 |
| 39 | 9.48 173 | 40 | 9.50 267 | 44 | 0.49 733 | 9.97 906 | 4 | 21 | 9 | 5.8 | 0.8 |
| 40 | 9.48 213 | 40 | 9.50 311 | 44 | 0.49 689 | 9.97 902 | 4 | 20 | 10 | 6.5 | 0.8 |
| 41 | 9.48 252 | 39 | 9.50 355 | 44 | 0.49 645 | 9.97 898 | 4 | 19 | 20 | 13.0 | 1.7 |
| 42 | 9.48 292 | 40 | 9.50 398 | 43 | 0.49 602 | 9.97 894 | 4 | 18 | 30 | 19.5 | 2.5 |
| 43 | 9.48 332 | 40 | 9.50 442 | 43 | 0.49 558 | 9.97 890 | 4 | 17 | 40 | 26.0 | 3.3 |
| 44 | 9.48 371 | 39 | 9.50 485 | 43 | 0.49 515 | 9.97 886 | 4 | 16 | 50 | 32.5 | 4.2 |
| 45 | 9.48 411 | 40 | 9.50 529 | 44 | 0.49 471 | 9.97 882 | 4 | 15 | | 5 | 4 |
| 46 | 9.48 450 | 40 | 9.50 572 | 44 | 0.49 428 | 9.97 878 | 4 | 14 | | 43 | 45 |
| 47 | 9.48 490 | 40 | 9.50 616 | 44 | 0.49 384 | 9.97 874 | 4 | 13 | | | 41 |
| 48 | 9.48 529 | 39 | 9.50 659 | 43 | 0.49 341 | 9.97 870 | 4 | 12 | 0 | 4.3 | 5.6 |
| 49 | 9.48 568 | 39 | 9.50 703 | 44 | 0.49 297 | 9.97 866 | 4 | 11 | 1 | 12.9 | 16.9 |
| 50 | 9.48 607 | 39 | 9.50 746 | 43 | 0.49 254 | 9.97 861 | 5 | 10 | 2 | 21.5 | 28.1 |
| 51 | 9.48 647 | 40 | 9.50 789 | 43 | 0.49 211 | 9.97 857 | 4 | 9 | 3 | 30.1 | 39.4 |
| 52 | 9.48 686 | 39 | 9.50 833 | 44 | 0.49 167 | 9.97 853 | 4 | 8 | 4 | 38.7 | — |
| 53 | 9.48 725 | 39 | 9.50 876 | 43 | 0.49 124 | 9.97 849 | 4 | 7 | 5 | | — |
| 54 | 9.48 764 | 39 | 9.50 919 | 43 | 0.49 081 | 9.97 845 | 4 | 6 | | 4 | 3 |
| 55 | 9.48 803 | 39 | 9.50 962 | 43 | 0.49 038 | 9.97 841 | 4 | 5 | | 43 | 45 |
| 56 | 9.48 842 | 39 | 9.51 005 | 43 | 0.48 995 | 9.97 837 | 4 | 4 | | | 44 |
| 57 | 9.48 881 | 39 | 9.51 048 | 43 | 0.48 952 | 9.97 833 | 4 | 3 | 0 | 5.4 | 7.5 |
| 58 | 9.48 920 | 39 | 9.51 092 | 44 | 0.48 908 | 9.97 829 | 4 | 2 | 1 | 16.1 | 22.5 |
| 59 | 9.48 959 | 39 | 9.51 135 | 43 | 0.48 865 | 9.97 825 | 4 | 1 | 2 | 26.9 | 37.5 |
| 60 | 9.48 998 | 39 | 9.51 178 | 43 | 0.48 822 | 9.97 821 | 4 | 0 | 3 | 37.6 | — |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | | P | P |

| | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P P | | |
|----|----------|----|----------|----|----------|----------|---|----|-----|------|------|
| 0 | 9.48 098 | | 9.51 178 | | 0.48 822 | 9.97 821 | | 60 | 43 | 42 | 41 |
| 1 | 9.49 037 | 39 | 9.51 221 | 43 | 0.48 779 | 9.97 817 | 4 | 59 | 0.7 | 0.7 | 0.7 |
| 2 | 9.49 076 | 39 | 9.51 264 | 43 | 0.48 736 | 9.97 812 | 5 | 58 | 2 | 1.4 | 1.4 |
| 3 | 9.49 115 | 39 | 9.51 306 | 42 | 0.48 694 | 9.97 808 | 4 | 57 | 3 | 2.2 | 2.1 |
| 4 | 9.49 153 | 38 | 9.51 349 | 43 | 0.48 651 | 9.97 804 | 4 | 56 | 4 | 2.9 | 2.8 |
| 5 | 9.49 192 | 39 | 9.51 392 | 43 | 0.48 608 | 9.97 800 | 4 | 55 | 5 | 3.6 | 3.5 |
| 6 | 9.49 231 | 39 | 9.51 435 | 43 | 0.48 565 | 9.97 796 | 4 | 54 | 6 | 4.3 | 4.2 |
| 7 | 9.49 269 | 38 | 9.51 478 | 42 | 0.48 522 | 9.97 792 | 4 | 53 | 7 | 5.0 | 4.9 |
| 8 | 9.49 308 | 39 | 9.51 520 | 42 | 0.48 480 | 9.97 788 | 4 | 52 | 8 | 5.7 | 5.6 |
| 9 | 9.49 347 | 39 | 9.51 563 | 43 | 0.48 437 | 9.97 784 | 4 | 51 | 9 | 6.4 | 6.3 |
| 10 | 9.49 385 | 38 | 9.51 606 | 42 | 0.48 394 | 9.97 779 | 5 | 50 | 10 | 7.2 | 7.0 |
| 11 | 9.49 424 | 39 | 9.51 648 | 42 | 0.48 352 | 9.97 775 | 4 | 49 | 20 | 14.3 | 14.0 |
| 12 | 9.49 462 | 38 | 9.51 691 | 43 | 0.48 309 | 9.97 771 | 4 | 48 | 30 | 21.5 | 21.0 |
| 13 | 9.49 500 | 38 | 9.51 734 | 42 | 0.48 266 | 9.97 767 | 4 | 47 | 40 | 28.7 | 28.0 |
| 14 | 9.49 539 | 39 | 9.51 776 | 43 | 0.48 224 | 9.97 763 | 4 | 46 | 50 | 35.8 | 35.0 |
| 15 | 9.49 577 | 38 | 9.51 819 | 42 | 0.48 181 | 9.97 759 | 4 | 45 | | 39 | 38 |
| 16 | 9.49 615 | 38 | 9.51 861 | 42 | 0.48 139 | 9.97 754 | 5 | 44 | 1 | 0.6 | 0.6 |
| 17 | 9.49 654 | 39 | 9.51 903 | 43 | 0.48 097 | 9.97 750 | 4 | 43 | 2 | 1.3 | 1.3 |
| 18 | 9.49 692 | 38 | 9.51 946 | 42 | 0.48 054 | 9.97 746 | 4 | 42 | 3 | 2.0 | 1.9 |
| 19 | 9.49 730 | 38 | 9.51 988 | 42 | 0.48 012 | 9.97 742 | 4 | 41 | 4 | 2.6 | 2.5 |
| 20 | 9.49 768 | 38 | 9.52 031 | 43 | 0.47 969 | 9.97 738 | 4 | 40 | 5 | 3.2 | 3.2 |
| 21 | 9.49 806 | 38 | 9.52 073 | 42 | 0.47 927 | 9.97 734 | 4 | 39 | 6 | 3.9 | 3.8 |
| 22 | 9.49 844 | 38 | 9.52 115 | 42 | 0.47 885 | 9.97 729 | 5 | 38 | 7 | 4.6 | 4.4 |
| 23 | 9.49 882 | 38 | 9.52 157 | 42 | 0.47 843 | 9.97 725 | 4 | 37 | 8 | 5.2 | 5.1 |
| 24 | 9.49 920 | 38 | 9.52 200 | 43 | 0.47 800 | 9.97 721 | 4 | 36 | 9 | 5.8 | 5.7 |
| 25 | 9.49 958 | 38 | 9.52 242 | 42 | 0.47 758 | 9.97 717 | 4 | 35 | 10 | 6.5 | 6.3 |
| 26 | 9.49 996 | 38 | 9.52 284 | 42 | 0.47 716 | 9.97 713 | 4 | 34 | 20 | 13.0 | 12.7 |
| 27 | 9.50 034 | 38 | 9.52 326 | 42 | 0.47 674 | 9.97 708 | 5 | 33 | 30 | 19.5 | 19.0 |
| 28 | 9.50 072 | 38 | 9.52 368 | 42 | 0.47 632 | 9.97 704 | 4 | 32 | 40 | 26.0 | 25.3 |
| 29 | 9.50 110 | 38 | 9.52 410 | 42 | 0.47 590 | 9.97 700 | 4 | 31 | 50 | 32.5 | 31.7 |
| 30 | 9.50 148 | 38 | 9.52 452 | 42 | 0.47 548 | 9.97 696 | 4 | 30 | | 36 | 5 |
| 31 | 9.50 185 | 37 | 9.52 494 | 42 | 0.47 506 | 9.97 691 | 5 | 29 | 1 | 0.6 | 0.1 |
| 32 | 9.50 223 | 38 | 9.52 536 | 42 | 0.47 464 | 9.97 687 | 4 | 28 | 2 | 1.2 | 0.2 |
| 33 | 9.50 261 | 38 | 9.52 578 | 42 | 0.47 422 | 9.97 683 | 4 | 27 | 3 | 1.8 | 0.2 |
| 34 | 9.50 298 | 37 | 9.52 620 | 41 | 0.47 380 | 9.97 679 | 4 | 26 | 4 | 2.4 | 0.3 |
| 35 | 9.50 336 | 38 | 9.52 661 | 42 | 0.47 339 | 9.97 674 | 5 | 25 | 5 | 3.0 | 0.4 |
| 36 | 9.50 374 | 38 | 9.52 703 | 42 | 0.47 297 | 9.97 670 | 4 | 24 | 6 | 3.6 | 0.5 |
| 37 | 9.50 411 | 37 | 9.52 745 | 42 | 0.47 255 | 9.97 666 | 4 | 23 | 7 | 4.2 | 0.6 |
| 38 | 9.50 449 | 38 | 9.52 787 | 42 | 0.47 213 | 9.97 662 | 4 | 22 | 8 | 4.8 | 0.7 |
| 39 | 9.50 486 | 37 | 9.52 829 | 41 | 0.47 171 | 9.97 657 | 5 | 21 | 9 | 5.4 | 0.8 |
| 40 | 9.50 523 | 37 | 9.52 870 | 42 | 0.47 130 | 9.97 653 | 4 | 20 | 10 | 6.0 | 0.8 |
| 41 | 9.50 561 | 38 | 9.52 912 | 41 | 0.47 088 | 9.97 649 | 4 | 19 | 20 | 12.0 | 1.7 |
| 42 | 9.50 598 | 37 | 9.52 953 | 42 | 0.47 047 | 9.97 645 | 4 | 18 | 30 | 18.0 | 2.5 |
| 43 | 9.50 635 | 38 | 9.52 995 | 42 | 0.47 005 | 9.97 640 | 5 | 17 | 40 | 24.0 | 3.3 |
| 44 | 9.50 673 | 37 | 9.53 037 | 41 | 0.46 963 | 9.97 636 | 4 | 16 | 50 | 30.0 | 4.2 |
| 45 | 9.50 710 | 37 | 9.53 078 | 42 | 0.46 922 | 9.97 632 | 4 | 15 | | 5 | 5 |
| 46 | 9.50 747 | 37 | 9.53 120 | 41 | 0.46 880 | 9.97 628 | 4 | 14 | | 5 | 5 |
| 47 | 9.50 784 | 37 | 9.53 161 | 41 | 0.46 839 | 9.97 623 | 5 | 13 | | 43 | 42 |
| 48 | 9.50 821 | 37 | 9.53 202 | 42 | 0.46 798 | 9.97 619 | 4 | 12 | 0 | 4.3 | 4.2 |
| 49 | 9.50 858 | 38 | 9.53 244 | 41 | 0.46 756 | 9.97 615 | 4 | 11 | 1 | 12.9 | 12.6 |
| 50 | 9.50 896 | 38 | 9.53 285 | 42 | 0.46 715 | 9.97 610 | 5 | 10 | 2 | 21.5 | 21.0 |
| 51 | 9.50 933 | 37 | 9.53 327 | 41 | 0.46 673 | 9.97 606 | 4 | 9 | 3 | 30.1 | 29.4 |
| 52 | 9.50 970 | 37 | 9.53 368 | 41 | 0.46 632 | 9.97 602 | 4 | 8 | 4 | 38.7 | 37.8 |
| 53 | 9.51 007 | 36 | 9.53 409 | 41 | 0.46 591 | 9.97 597 | 5 | 7 | 5 | | |
| 54 | 9.51 043 | 37 | 9.53 450 | 42 | 0.46 550 | 9.97 593 | 4 | 6 | | 4 | 4 |
| 55 | 9.51 080 | 37 | 9.53 492 | 42 | 0.46 508 | 9.97 589 | 4 | 5 | | 43 | 42 |
| 56 | 9.51 117 | 37 | 9.53 533 | 41 | 0.46 467 | 9.97 584 | 5 | 4 | | 4 | 41 |
| 57 | 9.51 154 | 37 | 9.53 574 | 41 | 0.46 426 | 9.97 580 | 4 | 3 | 0 | 5.4 | 5.2 |
| 58 | 9.51 191 | 36 | 9.53 615 | 41 | 0.46 385 | 9.97 576 | 4 | 2 | 1 | 16.1 | 15.8 |
| 59 | 9.51 227 | 37 | 9.53 656 | 41 | 0.46 344 | 9.97 571 | 5 | 1 | 2 | 26.0 | 26.2 |
| 60 | 9.51 264 | 37 | 9.53 697 | 41 | 0.46 303 | 9.97 567 | 4 | 0 | 3 | 37.6 | 36.8 |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P P | | |

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | P P | | |
|----|----------|----|----------|-----|----------|----------|---|-----|----|------|
| 0 | 9.51 264 | | 9.53 697 | | 0.46 303 | 9.97 567 | | 60 | | |
| 1 | 9.51 301 | 37 | 9.53 738 | 41 | 0.46 262 | 9.97 503 | 4 | 59 | 41 | 40 |
| 2 | 9.51 338 | 37 | 9.53 779 | 41 | 0.46 221 | 9.97 558 | 5 | 58 | 1 | 0.7 |
| 3 | 9.51 374 | 36 | 9.53 820 | 41 | 0.46 180 | 9.97 554 | 4 | 57 | 2 | 1.4 |
| 4 | 9.51 411 | 37 | 9.53 861 | 41 | 0.46 139 | 9.97 550 | 4 | 56 | 3 | 2.0 |
| 5 | 9.51 447 | 36 | 9.53 902 | 41 | 0.46 098 | 9.97 545 | 5 | 55 | 4 | 2.7 |
| 6 | 9.51 484 | 37 | 9.53 943 | 41 | 0.46 057 | 9.97 541 | 4 | 54 | 5 | 3.4 |
| 7 | 9.51 520 | 36 | 9.53 984 | 41 | 0.46 016 | 9.97 536 | 5 | 53 | 6 | 4.1 |
| 8 | 9.51 557 | 37 | 9.54 025 | 41 | 0.45 975 | 9.97 532 | 4 | 52 | 7 | 4.8 |
| 9 | 9.51 593 | 36 | 9.54 065 | 40 | 0.45 935 | 9.97 528 | 4 | 51 | 8 | 5.5 |
| 10 | 9.51 629 | 36 | 9.54 106 | 40 | 0.45 894 | 9.97 523 | 5 | 50 | 9 | 6.2 |
| 11 | 9.51 666 | 37 | 9.54 147 | 41 | 0.45 853 | 9.97 519 | 4 | 49 | 10 | 6.8 |
| 12 | 9.51 702 | 36 | 9.54 187 | 40 | 0.45 813 | 9.97 515 | 4 | 48 | 20 | 13.7 |
| 13 | 9.51 738 | 36 | 9.54 228 | 41 | 0.45 772 | 9.97 510 | 5 | 47 | 30 | 20.5 |
| 14 | 9.51 774 | 36 | 9.54 269 | 41 | 0.45 731 | 9.97 506 | 4 | 46 | 40 | 27.3 |
| 15 | 9.51 811 | 37 | 9.54 309 | 40 | 0.45 691 | 9.97 501 | 5 | 45 | 50 | 34.2 |
| 16 | 9.51 847 | 36 | 9.54 350 | 41 | 0.45 650 | 9.97 497 | 4 | 44 | | |
| 17 | 9.51 883 | 36 | 9.54 390 | 40 | 0.45 610 | 9.97 492 | 5 | 43 | 37 | 36 |
| 18 | 9.51 919 | 36 | 9.54 431 | 41 | 0.45 569 | 9.97 488 | 4 | 42 | 1 | 0.6 |
| 19 | 9.51 955 | 36 | 9.54 471 | 40 | 0.45 529 | 9.97 484 | 4 | 41 | 2 | 1.2 |
| 20 | 9.51 991 | 36 | 9.54 512 | 41 | 0.45 488 | 9.97 479 | 5 | 40 | 3 | 1.8 |
| 21 | 9.52 027 | 36 | 9.54 552 | 40 | 0.45 448 | 9.97 475 | 4 | 39 | 4 | 2.5 |
| 22 | 9.52 063 | 36 | 9.54 593 | 41 | 0.45 407 | 9.97 470 | 5 | 38 | 5 | 3.1 |
| 23 | 9.52 099 | 36 | 9.54 633 | 40 | 0.45 367 | 9.97 466 | 4 | 37 | 6 | 3.7 |
| 24 | 9.52 135 | 36 | 9.54 673 | 41 | 0.45 327 | 9.97 461 | 5 | 36 | 7 | 4.3 |
| 25 | 9.52 171 | 36 | 9.54 714 | 40 | 0.45 286 | 9.97 457 | 4 | 35 | 8 | 4.9 |
| 26 | 9.52 207 | 36 | 9.54 754 | 40 | 0.45 246 | 9.97 453 | 4 | 34 | 9 | 5.6 |
| 27 | 9.52 242 | 35 | 9.54 794 | 40 | 0.45 206 | 9.97 448 | 5 | 33 | 10 | 6.2 |
| 28 | 9.52 278 | 36 | 9.54 835 | 41 | 0.45 165 | 9.97 444 | 4 | 32 | 20 | 12.3 |
| 29 | 9.52 314 | 36 | 9.54 875 | 40 | 0.45 125 | 9.97 439 | 5 | 31 | 30 | 18.5 |
| 30 | 9.52 350 | 35 | 9.54 915 | 40 | 0.45 085 | 9.97 435 | 4 | 30 | 40 | 24.7 |
| 31 | 9.52 385 | 36 | 9.54 955 | 40 | 0.45 045 | 9.97 430 | 5 | 29 | 50 | 30.8 |
| 32 | 9.52 421 | 36 | 9.54 995 | 40 | 0.45 005 | 9.97 426 | 4 | 28 | | |
| 33 | 9.52 456 | 35 | 9.55 035 | 40 | 0.44 965 | 9.97 421 | 5 | 27 | 34 | 5 |
| 34 | 9.52 492 | 35 | 9.55 075 | 40 | 0.44 925 | 9.97 417 | 4 | 26 | 1 | 0.6 |
| 35 | 9.52 527 | 36 | 9.55 115 | 40 | 0.44 885 | 9.97 412 | 5 | 25 | 2 | 1.1 |
| 36 | 9.52 563 | 35 | 9.55 155 | 40 | 0.44 845 | 9.97 408 | 4 | 24 | 3 | 1.7 |
| 37 | 9.52 598 | 36 | 9.55 195 | 40 | 0.44 805 | 9.97 403 | 5 | 23 | 4 | 2.3 |
| 38 | 9.52 634 | 35 | 9.55 235 | 40 | 0.44 765 | 9.97 399 | 4 | 22 | 5 | 2.8 |
| 39 | 9.52 669 | 36 | 9.55 275 | 40 | 0.44 725 | 9.97 394 | 5 | 21 | 6 | 3.4 |
| 40 | 9.52 705 | 35 | 9.55 315 | 40 | 0.44 685 | 9.97 390 | 4 | 20 | 7 | 4.0 |
| 41 | 9.52 740 | 35 | 9.55 355 | 40 | 0.44 645 | 9.97 385 | 5 | 19 | 8 | 4.6 |
| 42 | 9.52 775 | 36 | 9.55 395 | 40 | 0.44 605 | 9.97 381 | 4 | 18 | 9 | 5.1 |
| 43 | 9.52 811 | 35 | 9.55 434 | 39 | 0.44 566 | 9.97 376 | 5 | 17 | 10 | 5.7 |
| 44 | 9.52 846 | 35 | 9.55 474 | 40 | 0.44 526 | 9.97 372 | 4 | 16 | 20 | 11.3 |
| 45 | 9.52 881 | 35 | 9.55 514 | 40 | 0.44 486 | 9.97 367 | 5 | 15 | 30 | 17.0 |
| 46 | 9.52 916 | 35 | 9.55 554 | 39 | 0.44 446 | 9.97 363 | 4 | 14 | 40 | 22.7 |
| 47 | 9.52 951 | 35 | 9.55 593 | 39 | 0.44 407 | 9.97 358 | 5 | 13 | 50 | 28.3 |
| 48 | 9.52 986 | 35 | 9.55 633 | 40 | 0.44 367 | 9.97 353 | 4 | 12 | | |
| 49 | 9.53 021 | 35 | 9.55 673 | 40 | 0.44 327 | 9.97 349 | 4 | 11 | 5 | 0.6 |
| 50 | 9.53 056 | 36 | 9.55 712 | 39 | 0.44 288 | 9.97 344 | 5 | 10 | 1 | 1.2 |
| 51 | 9.53 092 | 34 | 9.55 752 | 40 | 0.44 248 | 9.97 340 | 4 | 9 | 2 | 1.8 |
| 52 | 9.53 126 | 35 | 9.55 791 | 39 | 0.44 209 | 9.97 335 | 5 | 8 | 3 | 2.3 |
| 53 | 9.53 161 | 35 | 9.55 831 | 40 | 0.44 169 | 9.97 331 | 4 | 7 | 4 | 2.8 |
| 54 | 9.53 196 | 35 | 9.55 870 | 39 | 0.44 130 | 9.97 326 | 5 | 6 | 5 | 3.4 |
| 55 | 9.53 231 | 35 | 9.55 910 | 39 | 0.44 090 | 9.97 322 | 4 | 5 | | |
| 56 | 9.53 266 | 35 | 9.55 949 | 39 | 0.44 051 | 9.97 317 | 5 | 4 | 4 | 4.0 |
| 57 | 9.53 301 | 35 | 9.55 989 | 40 | 0.44 011 | 9.97 312 | 4 | 3 | 5 | 4.6 |
| 58 | 9.53 336 | 34 | 9.56 028 | 39 | 0.43 972 | 9.97 308 | 5 | 2 | 6 | 5.1 |
| 59 | 9.53 370 | 35 | 9.56 067 | 39 | 0.43 933 | 9.97 303 | 4 | 1 | 7 | 5.6 |
| 60 | 9.53 405 | 35 | 9.56 107 | 40 | 0.43 893 | 9.97 299 | 4 | 0 | 8 | 6.2 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | P P | | |

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P | P | | |
|----|----------|----|----------|-----|----------|----------|---|----|----|------|------|------|
| 0 | 9.53 405 | 35 | 9.50 107 | 39 | 0.43 893 | 9.97 299 | 5 | 60 | 40 | 39 | 38 | |
| 1 | 9.53 440 | 35 | 9.50 146 | 39 | 0.43 854 | 9.97 294 | 5 | 59 | 1 | 0.7 | 0.6 | |
| 2 | 9.53 475 | 35 | 9.50 185 | 39 | 0.43 815 | 9.97 289 | 5 | 58 | 2 | 1.3 | 1.3 | |
| 3 | 9.53 509 | 34 | 9.50 224 | 39 | 0.43 776 | 9.97 285 | 5 | 57 | 3 | 2.0 | 2.0 | |
| 4 | 9.53 544 | 35 | 9.50 264 | 40 | 0.43 736 | 9.97 280 | 5 | 56 | 4 | 2.7 | 2.6 | |
| 5 | 9.53 578 | 34 | 9.50 303 | 39 | 0.43 697 | 9.97 276 | 4 | 55 | 5 | 3.3 | 3.2 | |
| 6 | 9.53 613 | 35 | 9.50 342 | 39 | 0.43 658 | 9.97 271 | 5 | 54 | 6 | 4.0 | 3.9 | |
| 7 | 9.53 647 | 34 | 9.50 381 | 39 | 0.43 619 | 9.97 266 | 5 | 53 | 7 | 4.7 | 4.6 | |
| 8 | 9.53 682 | 35 | 9.50 420 | 39 | 0.43 580 | 9.97 262 | 4 | 52 | 8 | 5.3 | 5.2 | |
| 9 | 9.53 716 | 34 | 9.50 459 | 39 | 0.43 541 | 9.97 257 | 5 | 51 | 9 | 6.0 | 5.8 | |
| 10 | 9.53 751 | 35 | 9.50 498 | 39 | 0.43 502 | 9.97 252 | 5 | 50 | 10 | 6.7 | 6.5 | |
| 11 | 9.53 785 | 34 | 9.50 537 | 39 | 0.43 463 | 9.97 248 | 4 | 49 | 20 | 13.3 | 13.0 | |
| 12 | 9.53 819 | 34 | 9.50 576 | 39 | 0.43 424 | 9.97 243 | 5 | 48 | 30 | 20.0 | 19.5 | |
| 13 | 9.53 854 | 35 | 9.50 615 | 39 | 0.43 385 | 9.97 238 | 5 | 47 | 40 | 26.7 | 26.0 | |
| 14 | 9.53 888 | 34 | 9.50 654 | 39 | 0.43 346 | 9.97 234 | 4 | 46 | 50 | 33.3 | 32.5 | |
| 15 | 9.53 922 | 34 | 9.50 693 | 39 | 0.43 307 | 9.97 229 | 5 | 45 | | 37 | 35 | 34 |
| 16 | 9.53 957 | 35 | 9.50 732 | 39 | 0.43 268 | 9.97 224 | 5 | 44 | 1 | 0.6 | 0.6 | |
| 17 | 9.53 991 | 34 | 9.50 771 | 39 | 0.43 229 | 9.97 220 | 4 | 43 | 2 | 1.2 | 1.2 | |
| 18 | 9.54 025 | 34 | 9.50 810 | 39 | 0.43 190 | 9.97 215 | 5 | 42 | 3 | 1.8 | 1.8 | |
| 19 | 9.54 059 | 34 | 9.50 849 | 39 | 0.43 151 | 9.97 210 | 5 | 41 | 4 | 2.5 | 2.3 | |
| 20 | 9.54 093 | 34 | 9.50 887 | 38 | 0.43 113 | 9.97 206 | 4 | 40 | 5 | 3.1 | 2.9 | |
| 21 | 9.54 127 | 34 | 9.50 926 | 39 | 0.43 074 | 9.97 201 | 5 | 39 | 6 | 3.7 | 3.5 | |
| 22 | 9.54 161 | 34 | 9.50 965 | 39 | 0.43 035 | 9.97 196 | 5 | 38 | 7 | 4.3 | 4.1 | |
| 23 | 9.54 195 | 34 | 9.50 004 | 39 | 0.42 996 | 9.97 192 | 4 | 37 | 8 | 4.9 | 4.7 | |
| 24 | 9.54 229 | 34 | 9.50 042 | 38 | 0.42 958 | 9.97 187 | 5 | 36 | 9 | 5.6 | 5.2 | |
| 25 | 9.54 263 | 34 | 9.50 081 | 39 | 0.42 919 | 9.97 182 | 5 | 35 | 10 | 6.2 | 5.8 | |
| 26 | 9.54 297 | 34 | 9.50 120 | 39 | 0.42 880 | 9.97 178 | 4 | 34 | 20 | 12.3 | 11.7 | |
| 27 | 9.54 331 | 34 | 9.50 158 | 38 | 0.42 842 | 9.97 173 | 5 | 33 | 30 | 18.5 | 17.5 | |
| 28 | 9.54 365 | 34 | 9.50 197 | 39 | 0.42 803 | 9.97 168 | 5 | 32 | 40 | 24.7 | 23.3 | |
| 29 | 9.54 399 | 34 | 9.50 235 | 38 | 0.42 765 | 9.97 163 | 5 | 31 | 50 | 30.8 | 29.2 | |
| 30 | 9.54 433 | 34 | 9.50 274 | 39 | 0.42 726 | 9.97 159 | 4 | 30 | | 33 | 5 | 4 |
| 31 | 9.54 466 | 33 | 9.50 312 | 38 | 0.42 688 | 9.97 154 | 5 | 29 | 1 | 0.6 | 0.1 | |
| 32 | 9.54 500 | 34 | 9.50 351 | 39 | 0.42 649 | 9.97 149 | 5 | 28 | 2 | 1.1 | 0.2 | |
| 33 | 9.54 534 | 34 | 9.50 389 | 38 | 0.42 611 | 9.97 145 | 4 | 27 | 3 | 1.6 | 0.2 | |
| 34 | 9.54 567 | 33 | 9.50 428 | 39 | 0.42 572 | 9.97 140 | 5 | 26 | 4 | 2.2 | 0.3 | |
| 35 | 9.54 601 | 34 | 9.50 466 | 38 | 0.42 534 | 9.97 135 | 5 | 25 | 5 | 2.8 | 0.4 | |
| 36 | 9.54 635 | 34 | 9.50 504 | 38 | 0.42 496 | 9.97 130 | 5 | 24 | 6 | 3.3 | 0.5 | |
| 37 | 9.54 668 | 33 | 9.50 543 | 39 | 0.42 457 | 9.97 126 | 4 | 23 | 7 | 3.8 | 0.6 | |
| 38 | 9.54 702 | 34 | 9.50 581 | 38 | 0.42 419 | 9.97 121 | 5 | 22 | 8 | 4.4 | 0.7 | |
| 39 | 9.54 735 | 33 | 9.50 619 | 38 | 0.42 381 | 9.97 116 | 5 | 21 | 9 | 5.0 | 0.8 | |
| 40 | 9.54 769 | 34 | 9.50 658 | 39 | 0.42 342 | 9.97 111 | 5 | 20 | 10 | 5.5 | 0.8 | |
| 41 | 9.54 802 | 33 | 9.50 696 | 38 | 0.42 304 | 9.97 107 | 4 | 19 | 20 | 11.0 | 1.7 | |
| 42 | 9.54 836 | 34 | 9.50 734 | 38 | 0.42 266 | 9.97 102 | 5 | 18 | 30 | 16.5 | 2.5 | |
| 43 | 9.54 869 | 33 | 9.50 772 | 38 | 0.42 228 | 9.97 097 | 5 | 17 | 40 | 22.0 | 3.3 | |
| 44 | 9.54 903 | 34 | 9.50 810 | 38 | 0.42 190 | 9.97 092 | 5 | 16 | 50 | 27.5 | 4.2 | |
| 45 | 9.54 936 | 33 | 9.50 849 | 39 | 0.42 151 | 9.97 087 | 5 | 15 | | 5 | 5 | 5 |
| 46 | 9.54 969 | 33 | 9.50 887 | 38 | 0.42 113 | 9.97 083 | 4 | 14 | 1 | 4.0 | 3.9 | |
| 47 | 9.55 003 | 34 | 9.50 925 | 38 | 0.42 075 | 9.97 078 | 5 | 13 | 0 | 4.0 | 3.9 | |
| 48 | 9.55 036 | 33 | 9.50 963 | 38 | 0.42 037 | 9.97 073 | 5 | 12 | 1 | 12.0 | 11.7 | |
| 49 | 9.55 069 | 33 | 9.50 001 | 38 | 0.41 999 | 9.97 068 | 5 | 11 | 2 | 20.0 | 19.5 | |
| 50 | 9.55 102 | 33 | 9.50 039 | 38 | 0.41 961 | 9.97 063 | 5 | 10 | 3 | 28.0 | 27.3 | |
| 51 | 9.55 136 | 34 | 9.50 077 | 38 | 0.41 923 | 9.97 059 | 4 | 9 | 4 | 36.0 | 35.1 | |
| 52 | 9.55 169 | 33 | 9.50 115 | 38 | 0.41 885 | 9.97 054 | 5 | 8 | 5 | | | |
| 53 | 9.55 202 | 33 | 9.50 153 | 38 | 0.41 847 | 9.97 049 | 5 | 7 | | 5 | 4 | 4 |
| 54 | 9.55 235 | 33 | 9.50 191 | 38 | 0.41 809 | 9.97 044 | 5 | 6 | | 37 | 39 | 38 |
| 55 | 9.55 268 | 33 | 9.50 229 | 38 | 0.41 771 | 9.97 039 | 5 | 5 | 0 | | | |
| 56 | 9.55 301 | 33 | 9.50 267 | 37 | 0.41 733 | 9.97 035 | 4 | 4 | 1 | 3.7 | 4.9 | 4.8 |
| 57 | 9.55 334 | 33 | 9.50 304 | 38 | 0.41 696 | 9.97 030 | 5 | 3 | 2 | 11.1 | 14.6 | 14.2 |
| 58 | 9.55 367 | 33 | 9.50 342 | 38 | 0.41 658 | 9.97 025 | 5 | 2 | 3 | 18.5 | 24.4 | 23.8 |
| 59 | 9.55 400 | 33 | 9.50 380 | 38 | 0.41 620 | 9.97 020 | 5 | 1 | 4 | 25.9 | 34.1 | 33.2 |
| 60 | 9.55 433 | 33 | 9.50 418 | 38 | 0.41 582 | 9.97 015 | 5 | 0 | 5 | 33.3 | — | — |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | P | P | | |

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*111° 201° *291°

| | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P | P | | |
|----|----------|----|----------|----|----------|----------|---|----|----|------|------|------|
| 0 | 9.55 433 | | 9.58 418 | | 0.41 582 | 9.97 015 | | 60 | 38 | 37 | 36 | |
| 1 | 9.55 466 | 33 | 9.58 455 | 37 | 0.41 545 | 9.97 010 | 5 | 59 | 1 | 0.6 | 0.6 | 0.6 |
| 2 | 9.55 499 | 33 | 9.58 493 | 38 | 0.41 507 | 9.97 005 | 5 | 58 | 2 | 1.3 | 1.2 | 1.2 |
| 3 | 9.55 532 | 32 | 9.58 531 | 38 | 0.41 469 | 9.97 001 | 5 | 57 | 3 | 1.9 | 1.8 | 1.8 |
| 4 | 9.55 564 | 33 | 9.58 569 | 37 | 0.41 431 | 9.96 996 | 5 | 56 | 4 | 2.5 | 2.5 | 2.4 |
| 5 | 9.55 597 | 33 | 9.58 606 | 37 | 0.41 394 | 9.96 991 | 5 | 55 | 5 | 3.2 | 3.1 | 3.0 |
| 6 | 9.55 630 | 33 | 9.58 644 | 37 | 0.41 356 | 9.96 986 | 5 | 54 | 6 | 3.8 | 3.7 | 3.6 |
| 7 | 9.55 663 | 32 | 9.58 681 | 37 | 0.41 319 | 9.96 981 | 5 | 53 | 7 | 4.4 | 4.3 | 4.2 |
| 8 | 9.55 695 | 33 | 9.58 719 | 38 | 0.41 281 | 9.96 976 | 5 | 52 | 8 | 5.1 | 4.9 | 4.8 |
| 9 | 9.55 728 | 33 | 9.58 757 | 37 | 0.41 243 | 9.96 971 | 5 | 51 | 9 | 5.7 | 5.6 | 5.4 |
| 10 | 9.55 761 | 32 | 9.58 794 | 38 | 0.41 206 | 9.96 966 | 5 | 50 | 10 | 6.3 | 6.2 | 6.0 |
| 11 | 9.55 793 | 33 | 9.58 832 | 37 | 0.41 168 | 9.96 962 | 4 | 49 | 20 | 12.7 | 12.3 | 12.0 |
| 12 | 9.55 826 | 32 | 9.58 869 | 37 | 0.41 131 | 9.96 957 | 5 | 48 | 30 | 19.0 | 18.5 | 18.0 |
| 13 | 9.55 858 | 33 | 9.58 907 | 38 | 0.41 093 | 9.96 952 | 5 | 47 | 40 | 25.3 | 24.7 | 24.0 |
| 14 | 9.55 891 | 32 | 9.58 944 | 37 | 0.41 056 | 9.96 947 | 5 | 46 | 50 | 31.7 | 30.8 | 30.0 |
| 15 | 9.55 923 | 33 | 9.58 981 | 37 | 0.41 019 | 9.96 942 | 5 | 45 | | 33 | 32 | 31 |
| 16 | 9.55 956 | 32 | 9.59 019 | 38 | 0.40 981 | 9.96 937 | 5 | 44 | 1 | 0.6 | 0.5 | 0.5 |
| 17 | 9.55 988 | 33 | 9.59 056 | 37 | 0.40 944 | 9.96 932 | 5 | 43 | 2 | 1.1 | 1.1 | 1.0 |
| 18 | 9.56 021 | 32 | 9.59 094 | 38 | 0.40 906 | 9.96 927 | 5 | 42 | 3 | 1.6 | 1.6 | 1.6 |
| 19 | 9.56 053 | 33 | 9.59 131 | 37 | 0.40 869 | 9.96 922 | 5 | 41 | 4 | 2.2 | 2.1 | 2.1 |
| 20 | 9.56 085 | 32 | 9.59 168 | 37 | 0.40 832 | 9.96 917 | 5 | 40 | 5 | 2.8 | 2.7 | 2.6 |
| 21 | 9.56 118 | 33 | 9.59 205 | 38 | 0.40 795 | 9.96 912 | 5 | 39 | 6 | 3.3 | 3.2 | 3.1 |
| 22 | 9.56 150 | 32 | 9.59 243 | 37 | 0.40 757 | 9.96 907 | 5 | 38 | 7 | 3.8 | 3.7 | 3.6 |
| 23 | 9.56 182 | 33 | 9.59 280 | 37 | 0.40 720 | 9.96 903 | 4 | 37 | 8 | 4.4 | 4.3 | 4.1 |
| 24 | 9.56 215 | 32 | 9.59 317 | 37 | 0.40 683 | 9.96 898 | 5 | 36 | 9 | 5.0 | 4.8 | 4.6 |
| 25 | 9.56 247 | 32 | 9.59 354 | 37 | 0.40 646 | 9.96 893 | 5 | 35 | 10 | 5.5 | 5.3 | 5.2 |
| 26 | 9.56 279 | 32 | 9.59 391 | 38 | 0.40 609 | 9.96 888 | 5 | 34 | 20 | 11.0 | 10.7 | 10.3 |
| 27 | 9.56 311 | 33 | 9.59 429 | 37 | 0.40 571 | 9.96 883 | 5 | 33 | 30 | 16.5 | 16.0 | 15.5 |
| 28 | 9.56 343 | 32 | 9.59 466 | 37 | 0.40 534 | 9.96 878 | 5 | 32 | 40 | 22.0 | 21.3 | 20.7 |
| 29 | 9.56 375 | 33 | 9.59 503 | 37 | 0.40 497 | 9.96 873 | 5 | 31 | 50 | 27.5 | 26.7 | 25.8 |
| 30 | 9.56 408 | 32 | 9.59 540 | 37 | 0.40 460 | 9.96 868 | 5 | 30 | | 6 | 5 | 4 |
| 31 | 9.56 440 | 32 | 9.59 577 | 37 | 0.40 423 | 9.96 863 | 5 | 29 | 1 | 0.1 | 0.1 | 0.1 |
| 32 | 9.56 472 | 32 | 9.59 614 | 37 | 0.40 386 | 9.96 858 | 5 | 28 | 2 | 0.2 | 0.2 | 0.1 |
| 33 | 9.56 504 | 32 | 9.59 651 | 37 | 0.40 349 | 9.96 853 | 5 | 27 | 3 | 0.3 | 0.2 | 0.2 |
| 34 | 9.56 536 | 32 | 9.59 688 | 37 | 0.40 312 | 9.96 848 | 5 | 26 | 4 | 0.4 | 0.3 | 0.3 |
| 35 | 9.56 568 | 31 | 9.59 725 | 37 | 0.40 275 | 9.96 843 | 5 | 25 | 5 | 0.5 | 0.4 | 0.3 |
| 36 | 9.56 599 | 32 | 9.59 762 | 37 | 0.40 238 | 9.96 838 | 5 | 24 | 6 | 0.6 | 0.5 | 0.4 |
| 37 | 9.56 631 | 32 | 9.59 799 | 36 | 0.40 201 | 9.96 833 | 5 | 23 | 7 | 0.7 | 0.6 | 0.5 |
| 38 | 9.56 663 | 32 | 9.59 835 | 37 | 0.40 165 | 9.96 828 | 5 | 22 | 8 | 0.8 | 0.7 | 0.5 |
| 39 | 9.56 695 | 32 | 9.59 872 | 37 | 0.40 128 | 9.96 823 | 5 | 21 | 9 | 0.9 | 0.8 | 0.6 |
| 40 | 9.56 727 | 32 | 9.59 909 | 37 | 0.40 091 | 9.96 818 | 5 | 20 | 10 | 1.0 | 0.8 | 0.7 |
| 41 | 9.56 759 | 31 | 9.59 946 | 37 | 0.40 054 | 9.96 813 | 5 | 19 | 20 | 2.0 | 1.7 | 1.3 |
| 42 | 9.56 790 | 32 | 9.59 983 | 36 | 0.40 017 | 9.96 808 | 5 | 18 | 30 | 3.0 | 2.5 | 2.0 |
| 43 | 9.56 822 | 32 | 9.60 019 | 37 | 0.39 981 | 9.96 803 | 5 | 17 | 40 | 4.0 | 3.3 | 2.7 |
| 44 | 9.56 854 | 32 | 9.60 056 | 37 | 0.39 944 | 9.96 798 | 5 | 16 | 50 | 5.0 | 4.2 | 3.3 |
| 45 | 9.56 886 | 31 | 9.60 093 | 37 | 0.39 907 | 9.96 793 | 5 | 15 | | 6 | 5 | 5 |
| 46 | 9.56 917 | 32 | 9.60 130 | 36 | 0.39 870 | 9.96 788 | 5 | 14 | | 37 | 38 | 37 |
| 47 | 9.56 949 | 31 | 9.60 166 | 37 | 0.39 834 | 9.96 783 | 5 | 13 | 0 | 3.1 | 3.8 | 3.7 |
| 48 | 9.56 980 | 32 | 9.60 203 | 37 | 0.39 797 | 9.96 778 | 5 | 12 | 1 | 9.2 | 11.4 | 11.1 |
| 49 | 9.57 012 | 32 | 9.60 240 | 36 | 0.39 760 | 9.96 772 | 6 | 11 | 2 | 15.4 | 19.0 | 18.5 |
| 50 | 9.57 044 | 31 | 9.60 276 | 36 | 0.39 724 | 9.96 767 | 5 | 10 | 3 | 21.6 | 26.6 | 25.9 |
| 51 | 9.57 075 | 32 | 9.60 313 | 37 | 0.39 687 | 9.96 762 | 5 | 9 | 4 | 27.8 | 34.2 | 33.3 |
| 52 | 9.57 107 | 32 | 9.60 349 | 36 | 0.39 651 | 9.96 757 | 5 | 8 | 5 | 33.9 | — | — |
| 53 | 9.57 138 | 31 | 9.60 386 | 36 | 0.39 614 | 9.96 752 | 5 | 7 | | 5 | 4 | 4 |
| 54 | 9.57 169 | 32 | 9.60 422 | 37 | 0.39 578 | 9.96 747 | 5 | 6 | | 36 | 38 | 37 |
| 55 | 9.57 201 | 31 | 9.60 459 | 36 | 0.39 541 | 9.96 742 | 5 | 5 | 0 | 3.6 | 4.8 | 4.6 |
| 56 | 9.57 232 | 32 | 9.60 495 | 37 | 0.39 505 | 9.96 737 | 5 | 4 | 1 | 10.8 | 14.2 | 13.9 |
| 57 | 9.57 264 | 31 | 9.60 532 | 36 | 0.39 468 | 9.96 732 | 5 | 3 | 2 | 18.0 | 23.8 | 23.1 |
| 58 | 9.57 295 | 31 | 9.60 568 | 37 | 0.39 432 | 9.96 727 | 5 | 2 | 3 | 25.2 | 33.2 | 32.4 |
| 59 | 9.57 326 | 32 | 9.60 605 | 36 | 0.39 395 | 9.96 722 | 5 | 1 | 4 | 32.4 | — | — |
| 60 | 9.57 358 | | 9.60 641 | | 0.39 359 | 9.96 717 | | 0 | 5 | | | |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P | P | | |

*158° 248° *338°

68°

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | P P | | | |
|----|----------|----|----------|-----|----------|----------|----|-----|------|------|------|
| 0 | 9.57 358 | 31 | 9.60 041 | 36 | 0.39 359 | 9.96 717 | 60 | 37 | 36 | 35 | |
| 1 | 9.57 389 | 31 | 9.60 077 | 36 | 0.39 323 | 9.96 711 | 59 | 1 | 0.6 | 0.6 | 0.6 |
| 2 | 9.57 420 | 31 | 9.60 714 | 37 | 0.39 286 | 9.96 706 | 58 | 2 | 1.2 | 1.2 | 1.2 |
| 3 | 9.57 451 | 31 | 9.60 750 | 36 | 0.39 250 | 9.96 701 | 57 | 3 | 1.8 | 1.8 | 1.8 |
| 4 | 9.57 482 | 32 | 9.60 786 | 36 | 0.39 214 | 9.96 696 | 56 | 4 | 2.3 | 2.4 | 2.3 |
| 5 | 9.57 514 | 31 | 9.60 823 | 37 | 0.39 177 | 9.96 691 | 55 | 5 | 3.1 | 3.0 | 2.9 |
| 6 | 9.57 545 | 31 | 9.60 859 | 36 | 0.39 141 | 9.96 686 | 54 | 6 | 3.7 | 3.6 | 3.5 |
| 7 | 9.57 576 | 31 | 9.60 895 | 36 | 0.39 105 | 9.96 681 | 53 | 7 | 4.3 | 4.2 | 4.1 |
| 8 | 9.57 607 | 31 | 9.60 931 | 36 | 0.39 069 | 9.96 676 | 52 | 8 | 4.9 | 4.8 | 4.7 |
| 9 | 9.57 638 | 31 | 9.60 967 | 36 | 0.39 033 | 9.96 670 | 51 | 9 | 5.6 | 5.4 | 5.2 |
| 10 | 9.57 669 | 31 | 9.61 004 | 37 | 0.38 996 | 9.96 665 | 50 | 10 | 6.2 | 6.0 | 5.8 |
| 11 | 9.57 700 | 31 | 9.61 040 | 36 | 0.38 960 | 9.96 660 | 49 | 20 | 12.3 | 12.0 | 11.7 |
| 12 | 9.57 731 | 31 | 9.61 076 | 35 | 0.38 924 | 9.96 655 | 48 | 30 | 18.5 | 18.0 | 17.5 |
| 13 | 9.57 762 | 31 | 9.61 112 | 36 | 0.38 888 | 9.96 650 | 47 | 40 | 24.7 | 24.0 | 23.3 |
| 14 | 9.57 793 | 31 | 9.61 148 | 36 | 0.38 852 | 9.96 645 | 46 | 50 | 30.8 | 30.0 | 29.2 |
| 15 | 9.57 824 | 31 | 9.61 184 | 36 | 0.38 816 | 9.96 640 | 45 | | 32 | 31 | 30 |
| 16 | 9.57 855 | 30 | 9.61 220 | 36 | 0.38 780 | 9.96 634 | 44 | 1 | 0.5 | 0.5 | 0.5 |
| 17 | 9.57 885 | 31 | 9.61 256 | 36 | 0.38 744 | 9.96 629 | 43 | 2 | 1.1 | 1.0 | 1.0 |
| 18 | 9.57 916 | 31 | 9.61 292 | 36 | 0.38 708 | 9.96 624 | 42 | 3 | 1.6 | 1.6 | 1.5 |
| 19 | 9.57 947 | 31 | 9.61 328 | 36 | 0.38 672 | 9.96 619 | 41 | 4 | 2.1 | 2.1 | 2.0 |
| 20 | 9.57 978 | 30 | 9.61 364 | 36 | 0.38 636 | 9.96 614 | 40 | 5 | 2.7 | 2.6 | 2.5 |
| 21 | 9.58 008 | 31 | 9.61 400 | 36 | 0.38 600 | 9.96 608 | 39 | 6 | 3.2 | 3.1 | 3.0 |
| 22 | 9.58 039 | 31 | 9.61 436 | 36 | 0.38 564 | 9.96 603 | 38 | 7 | 3.7 | 3.6 | 3.5 |
| 23 | 9.58 070 | 31 | 9.61 472 | 36 | 0.38 528 | 9.96 598 | 37 | 8 | 4.3 | 4.1 | 4.0 |
| 24 | 9.58 101 | 30 | 9.61 508 | 36 | 0.38 492 | 9.96 593 | 36 | 9 | 4.8 | 4.6 | 4.5 |
| 25 | 9.58 131 | 30 | 9.61 544 | 36 | 0.38 456 | 9.96 588 | 35 | 10 | 5.3 | 5.2 | 5.0 |
| 26 | 9.58 162 | 30 | 9.61 579 | 35 | 0.38 421 | 9.96 582 | 34 | 20 | 10.7 | 10.3 | 10.0 |
| 27 | 9.58 192 | 30 | 9.61 615 | 36 | 0.38 385 | 9.96 577 | 33 | 30 | 16.0 | 15.5 | 15.0 |
| 28 | 9.58 223 | 31 | 9.61 651 | 36 | 0.38 349 | 9.96 572 | 32 | 40 | 21.3 | 20.7 | 20.0 |
| 29 | 9.58 253 | 30 | 9.61 687 | 36 | 0.38 313 | 9.96 567 | 31 | 50 | 26.7 | 25.8 | 25.0 |
| 30 | 9.58 284 | 31 | 9.61 722 | 35 | 0.38 278 | 9.96 562 | 30 | | 29 | 6 | 5 |
| 31 | 9.58 314 | 30 | 9.61 758 | 36 | 0.38 242 | 9.96 556 | 29 | 1 | 0.5 | 0.1 | 0.1 |
| 32 | 9.58 345 | 31 | 9.61 794 | 36 | 0.38 206 | 9.96 551 | 28 | 2 | 1.0 | 0.2 | 0.2 |
| 33 | 9.58 375 | 30 | 9.61 830 | 36 | 0.38 170 | 9.96 546 | 27 | 3 | 1.4 | 0.3 | 0.2 |
| 34 | 9.58 406 | 31 | 9.61 865 | 35 | 0.38 135 | 9.96 541 | 26 | 4 | 1.9 | 0.4 | 0.3 |
| 35 | 9.58 436 | 30 | 9.61 901 | 36 | 0.38 099 | 9.96 535 | 25 | 5 | 2.4 | 0.5 | 0.4 |
| 36 | 9.58 467 | 30 | 9.61 936 | 36 | 0.38 064 | 9.96 530 | 24 | 6 | 2.9 | 0.6 | 0.5 |
| 37 | 9.58 497 | 30 | 9.61 972 | 36 | 0.38 028 | 9.96 525 | 23 | 7 | 3.4 | 0.7 | 0.6 |
| 38 | 9.58 527 | 30 | 9.62 008 | 36 | 0.37 992 | 9.96 520 | 22 | 8 | 3.9 | 0.8 | 0.7 |
| 39 | 9.58 557 | 31 | 9.62 043 | 35 | 0.37 957 | 9.96 514 | 21 | 9 | 4.4 | 0.9 | 0.8 |
| 40 | 9.58 588 | 30 | 9.62 079 | 36 | 0.37 921 | 9.96 509 | 20 | 10 | 4.8 | 1.0 | 0.8 |
| 41 | 9.58 618 | 30 | 9.62 114 | 35 | 0.37 886 | 9.96 504 | 19 | 20 | 9.7 | 2.0 | 1.7 |
| 42 | 9.58 648 | 30 | 9.62 150 | 36 | 0.37 850 | 9.96 498 | 18 | 30 | 14.5 | 3.0 | 2.5 |
| 43 | 9.58 678 | 30 | 9.62 185 | 35 | 0.37 815 | 9.96 493 | 17 | 40 | 19.3 | 4.0 | 3.3 |
| 44 | 9.58 709 | 31 | 9.62 221 | 36 | 0.37 779 | 9.96 488 | 16 | 50 | 24.2 | 5.0 | 4.2 |
| 45 | 9.58 739 | 30 | 9.62 256 | 35 | 0.37 744 | 9.96 483 | 15 | | 6 | 6 | |
| 46 | 9.58 769 | 30 | 9.62 292 | 36 | 0.37 708 | 9.96 477 | 14 | | 36 | 35 | |
| 47 | 9.58 799 | 30 | 9.62 327 | 35 | 0.37 673 | 9.96 472 | 13 | 0 | | | |
| 48 | 9.58 829 | 30 | 9.62 362 | 35 | 0.37 638 | 9.96 467 | 12 | 1 | 3.0 | 2.0 | |
| 49 | 9.58 859 | 30 | 9.62 398 | 36 | 0.37 602 | 9.96 461 | 11 | 2 | 0.0 | 8.8 | |
| 50 | 9.58 889 | 30 | 9.62 433 | 35 | 0.37 567 | 9.96 456 | 10 | 3 | 15.0 | 14.6 | |
| 51 | 9.58 919 | 30 | 9.62 468 | 35 | 0.37 532 | 9.96 451 | 9 | 4 | 21.0 | 20.4 | |
| 52 | 9.58 949 | 30 | 9.62 504 | 36 | 0.37 496 | 9.96 445 | 8 | 5 | 27.0 | 26.2 | |
| 53 | 9.58 979 | 30 | 9.62 539 | 35 | 0.37 461 | 9.96 440 | 7 | 6 | 33.0 | 32.1 | |
| 54 | 9.59 009 | 30 | 9.62 574 | 35 | 0.37 426 | 9.96 435 | 6 | | 5 | 5 | 5 |
| 55 | 9.59 039 | 30 | 9.62 609 | 35 | 0.37 391 | 9.96 429 | 5 | | 37 | 36 | 35 |
| 56 | 9.59 069 | 29 | 9.62 645 | 36 | 0.37 355 | 9.96 424 | 4 | 0 | | | |
| 57 | 9.59 098 | 30 | 9.62 680 | 35 | 0.37 320 | 9.96 419 | 3 | 1 | 3.7 | 3.6 | 3.5 |
| 58 | 9.59 128 | 30 | 9.62 715 | 35 | 0.37 285 | 9.96 413 | 2 | 2 | 11.1 | 10.8 | 10.5 |
| 59 | 9.59 158 | 30 | 9.62 750 | 35 | 0.37 250 | 9.96 408 | 1 | 3 | 18.5 | 18.0 | 17.5 |
| 60 | 9.59 188 | 30 | 9.62 785 | 35 | 0.37 215 | 9.96 403 | 0 | 4 | 25.0 | 25.2 | 24.5 |
| | | | | | | | | 5 | 33.3 | 32.4 | 31.5 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | P P | | | |

| | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P P | | |
|----|----------|----|----------|----|----------|----------|---|----|-----|------|------|
| 0 | 9.59 188 | | 9.62 785 | | 0.37 215 | 9.96 403 | | 60 | 36 | 35 | 34 |
| 1 | 9.59 218 | 30 | 9.62 820 | 35 | 0.37 180 | 9.96 397 | 6 | 59 | 1 | 0.6 | 0.6 |
| 2 | 9.59 247 | 29 | 9.62 855 | 35 | 0.37 145 | 9.96 392 | 5 | 58 | 2 | 1.2 | 1.2 |
| 3 | 9.59 277 | 30 | 9.62 890 | 35 | 0.37 110 | 9.96 387 | 5 | 57 | 3 | 1.8 | 1.8 |
| 4 | 9.59 307 | 30 | 9.62 926 | 35 | 0.37 074 | 9.96 381 | 5 | 56 | 4 | 2.4 | 2.3 |
| 5 | 9.59 336 | 29 | 9.62 961 | 35 | 0.37 039 | 9.96 376 | 5 | 55 | 5 | 3.0 | 2.9 |
| 6 | 9.59 366 | 30 | 9.62 996 | 35 | 0.37 004 | 9.96 370 | 5 | 54 | 6 | 3.6 | 3.5 |
| 7 | 9.59 396 | 30 | 9.63 031 | 35 | 0.36 969 | 9.96 365 | 5 | 53 | 7 | 4.2 | 4.1 |
| 8 | 9.59 425 | 29 | 9.63 066 | 35 | 0.36 934 | 9.96 360 | 5 | 52 | 8 | 4.8 | 4.7 |
| 9 | 9.59 455 | 30 | 9.63 101 | 35 | 0.36 899 | 9.96 354 | 5 | 51 | 9 | 5.4 | 5.2 |
| 10 | 9.59 484 | 29 | 9.63 135 | 34 | 0.36 865 | 9.96 349 | 5 | 50 | 10 | 6.0 | 5.8 |
| 11 | 9.59 514 | 30 | 9.63 170 | 35 | 0.36 830 | 9.96 343 | 6 | 49 | 20 | 12.0 | 11.7 |
| 12 | 9.59 543 | 29 | 9.63 205 | 35 | 0.36 795 | 9.96 338 | 5 | 48 | 30 | 18.0 | 17.5 |
| 13 | 9.59 573 | 30 | 9.63 240 | 35 | 0.36 760 | 9.96 333 | 5 | 47 | 40 | 24.0 | 23.3 |
| 14 | 9.59 602 | 29 | 9.63 275 | 35 | 0.36 725 | 9.96 327 | 6 | 46 | 50 | 30.0 | 29.2 |
| 15 | 9.59 632 | 30 | 9.63 310 | 35 | 0.36 690 | 9.96 322 | 5 | 45 | 30 | 29 | 28 |
| 16 | 9.59 661 | 29 | 9.63 345 | 35 | 0.36 655 | 9.96 316 | 6 | 44 | 1 | 0.5 | 0.5 |
| 17 | 9.59 690 | 30 | 9.63 379 | 35 | 0.36 621 | 9.96 311 | 5 | 43 | 2 | 1.0 | 1.0 |
| 18 | 9.59 720 | 29 | 9.63 414 | 35 | 0.36 586 | 9.96 305 | 6 | 42 | 3 | 1.5 | 1.4 |
| 19 | 9.59 749 | 30 | 9.63 449 | 35 | 0.36 551 | 9.96 300 | 5 | 41 | 4 | 2.0 | 1.9 |
| 20 | 9.59 778 | 29 | 9.63 484 | 35 | 0.36 516 | 9.96 294 | 6 | 40 | 5 | 2.5 | 2.4 |
| 21 | 9.59 808 | 30 | 9.63 519 | 35 | 0.36 481 | 9.96 289 | 5 | 39 | 6 | 3.0 | 2.9 |
| 22 | 9.59 837 | 29 | 9.63 553 | 34 | 0.36 447 | 9.96 284 | 5 | 38 | 7 | 3.5 | 3.4 |
| 23 | 9.59 866 | 30 | 9.63 588 | 35 | 0.36 412 | 9.96 278 | 6 | 37 | 8 | 4.0 | 3.9 |
| 24 | 9.59 895 | 29 | 9.63 623 | 35 | 0.36 377 | 9.96 273 | 5 | 36 | 9 | 4.5 | 4.4 |
| 25 | 9.59 924 | 30 | 9.63 657 | 34 | 0.36 343 | 9.96 267 | 6 | 35 | 10 | 5.0 | 4.8 |
| 26 | 9.59 954 | 29 | 9.63 692 | 35 | 0.36 308 | 9.96 262 | 5 | 34 | 20 | 10.0 | 9.7 |
| 27 | 9.59 983 | 30 | 9.63 726 | 34 | 0.36 274 | 9.96 256 | 6 | 33 | 30 | 15.0 | 14.5 |
| 28 | 9.60 012 | 29 | 9.63 761 | 35 | 0.36 239 | 9.96 251 | 5 | 32 | 40 | 20.0 | 19.3 |
| 29 | 9.60 041 | 30 | 9.63 796 | 35 | 0.36 204 | 9.96 245 | 6 | 31 | 50 | 25.0 | 24.2 |
| 30 | 9.60 070 | 29 | 9.63 830 | 34 | 0.36 170 | 9.96 240 | 5 | 30 | | 6 | 5 |
| 31 | 9.60 099 | 30 | 9.63 865 | 35 | 0.36 135 | 9.96 234 | 6 | 29 | 1 | 0.1 | 0.1 |
| 32 | 9.60 128 | 29 | 9.63 899 | 34 | 0.36 101 | 9.96 229 | 5 | 28 | 2 | 0.2 | 0.2 |
| 33 | 9.60 157 | 30 | 9.63 934 | 35 | 0.36 066 | 9.96 223 | 6 | 27 | 3 | 0.3 | 0.2 |
| 34 | 9.60 186 | 29 | 9.63 968 | 34 | 0.36 032 | 9.96 218 | 5 | 26 | 4 | 0.4 | 0.3 |
| 35 | 9.60 215 | 30 | 9.64 003 | 35 | 0.35 997 | 9.96 212 | 6 | 25 | 5 | 0.5 | 0.4 |
| 36 | 9.60 244 | 29 | 9.64 037 | 34 | 0.35 963 | 9.96 207 | 5 | 24 | 6 | 0.6 | 0.5 |
| 37 | 9.60 273 | 30 | 9.64 072 | 35 | 0.35 928 | 9.96 201 | 6 | 23 | 7 | 0.7 | 0.6 |
| 38 | 9.60 302 | 29 | 9.64 106 | 34 | 0.35 894 | 9.96 196 | 5 | 22 | 8 | 0.8 | 0.7 |
| 39 | 9.60 331 | 30 | 9.64 140 | 35 | 0.35 860 | 9.96 190 | 6 | 21 | 9 | 0.9 | 0.8 |
| 40 | 9.60 359 | 29 | 9.64 175 | 34 | 0.35 825 | 9.96 185 | 5 | 20 | 10 | 1.0 | 0.8 |
| 41 | 9.60 388 | 30 | 9.64 209 | 35 | 0.35 791 | 9.96 179 | 6 | 19 | 20 | 2.0 | 1.7 |
| 42 | 9.60 417 | 29 | 9.64 243 | 34 | 0.35 757 | 9.96 174 | 5 | 18 | 30 | 3.0 | 2.5 |
| 43 | 9.60 446 | 30 | 9.64 278 | 35 | 0.35 722 | 9.96 168 | 6 | 17 | 40 | 4.0 | 3.3 |
| 44 | 9.60 476 | 29 | 9.64 312 | 34 | 0.35 688 | 9.96 162 | 5 | 16 | 50 | 5.0 | 4.2 |
| 45 | 9.60 503 | 30 | 9.64 346 | 35 | 0.35 654 | 9.96 157 | 6 | 15 | | 6 | 6 |
| 46 | 9.60 532 | 29 | 9.64 381 | 34 | 0.35 619 | 9.96 151 | 5 | 14 | 0 | 36 | 34 |
| 47 | 9.60 561 | 30 | 9.64 415 | 35 | 0.35 585 | 9.96 146 | 6 | 13 | 1 | 3.0 | 2.9 |
| 48 | 9.60 589 | 29 | 9.64 449 | 34 | 0.35 551 | 9.96 140 | 5 | 12 | 2 | 9.0 | 8.8 |
| 49 | 9.60 618 | 30 | 9.64 483 | 35 | 0.35 517 | 9.96 135 | 6 | 11 | 3 | 15.0 | 14.6 |
| 50 | 9.60 646 | 29 | 9.64 517 | 34 | 0.35 483 | 9.96 129 | 5 | 10 | 4 | 21.0 | 20.4 |
| 51 | 9.60 675 | 30 | 9.64 552 | 35 | 0.35 448 | 9.96 123 | 6 | 9 | 5 | 27.0 | 26.2 |
| 52 | 9.60 704 | 29 | 9.64 586 | 34 | 0.35 414 | 9.96 118 | 5 | 8 | 6 | 33.0 | 32.1 |
| 53 | 9.60 732 | 30 | 9.64 620 | 35 | 0.35 380 | 9.96 112 | 6 | 7 | | 5 | 5 |
| 54 | 9.60 761 | 29 | 9.64 654 | 34 | 0.35 346 | 9.96 107 | 5 | 6 | | 35 | 34 |
| 55 | 9.60 789 | 30 | 9.64 688 | 35 | 0.35 312 | 9.96 101 | 6 | 5 | 0 | | |
| 56 | 9.60 818 | 29 | 9.64 722 | 34 | 0.35 278 | 9.96 095 | 5 | 4 | 1 | 3.5 | 3.4 |
| 57 | 9.60 846 | 30 | 9.64 756 | 35 | 0.35 244 | 9.96 090 | 6 | 3 | 2 | 10.5 | 10.2 |
| 58 | 9.60 875 | 29 | 9.64 790 | 34 | 0.35 210 | 9.96 084 | 5 | 2 | 3 | 17.5 | 17.0 |
| 59 | 9.60 903 | 30 | 9.64 824 | 35 | 0.35 176 | 9.96 079 | 6 | 1 | 4 | 24.5 | 23.8 |
| 60 | 9.60 931 | 29 | 9.64 858 | 34 | 0.35 142 | 9.96 073 | 5 | 0 | 5 | 31.5 | 30.6 |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P P | | |

| | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P P | | | |
|----|----------|----|----------|----|----------|----------|---|----|-----|------|------|------|
| 0 | 9.00 931 | 29 | 9.04 858 | 34 | 0.35 142 | 9.96 073 | 6 | 60 | | | | |
| 1 | 9.00 960 | 28 | 9.04 892 | 34 | 0.35 108 | 9.96 067 | 5 | 59 | 34 | 33 | | |
| 2 | 9.00 988 | 28 | 9.04 926 | 34 | 0.35 074 | 9.96 062 | 5 | 58 | 1 | 0.6 | 0.6 | |
| 3 | 9.01 016 | 28 | 9.04 960 | 34 | 0.35 040 | 9.96 056 | 6 | 57 | 2 | 1.1 | 1.1 | |
| 4 | 9.01 045 | 29 | 9.04 994 | 34 | 0.35 006 | 9.96 050 | 5 | 56 | 3 | 1.7 | 1.6 | |
| 5 | 9.01 073 | 28 | 9.05 028 | 34 | 0.34 972 | 9.96 045 | 5 | 55 | 4 | 2.3 | 2.2 | |
| 6 | 9.01 101 | 28 | 9.05 062 | 34 | 0.34 938 | 9.96 039 | 6 | 54 | 5 | 2.8 | 2.8 | |
| 7 | 9.01 129 | 28 | 9.05 096 | 34 | 0.34 904 | 9.96 034 | 5 | 53 | 6 | 3.4 | 3.3 | |
| 8 | 9.01 158 | 29 | 9.05 130 | 34 | 0.34 870 | 9.96 028 | 6 | 52 | 7 | 4.0 | 3.8 | |
| 9 | 9.01 186 | 28 | 9.05 164 | 34 | 0.34 836 | 9.96 022 | 6 | 51 | 8 | 4.5 | 4.4 | |
| 10 | 9.01 214 | 28 | 9.05 197 | 33 | 0.34 803 | 9.96 017 | 5 | 50 | 9 | 5.1 | 5.0 | |
| 11 | 9.01 242 | 28 | 9.05 231 | 34 | 0.34 769 | 9.96 011 | 6 | 49 | 10 | 5.7 | 5.5 | |
| 12 | 9.01 270 | 28 | 9.05 265 | 34 | 0.34 735 | 9.96 005 | 5 | 48 | 20 | 11.3 | 11.0 | |
| 13 | 9.01 298 | 28 | 9.05 299 | 34 | 0.34 701 | 9.96 000 | 6 | 47 | 30 | 17.0 | 16.5 | |
| 14 | 9.01 326 | 28 | 9.05 333 | 34 | 0.34 667 | 9.95 994 | 6 | 46 | 40 | 22.7 | 22.0 | |
| 15 | 9.01 354 | 28 | 9.05 366 | 33 | 0.34 634 | 9.95 988 | 6 | 45 | 50 | 28.3 | 27.5 | |
| 16 | 9.01 382 | 28 | 9.05 400 | 34 | 0.34 600 | 9.95 982 | 5 | 44 | | | | |
| 17 | 9.01 411 | 29 | 9.05 434 | 34 | 0.34 566 | 9.95 977 | 5 | 43 | 29 | 28 | 27 | |
| 18 | 9.01 438 | 27 | 9.05 467 | 33 | 0.34 533 | 9.95 971 | 6 | 42 | 1 | 0.5 | 0.5 | 0.4 |
| 19 | 9.01 466 | 28 | 9.05 501 | 34 | 0.34 499 | 9.95 965 | 5 | 41 | 2 | 1.0 | 0.9 | 0.9 |
| 20 | 9.01 494 | 28 | 9.05 535 | 34 | 0.34 465 | 9.95 960 | 6 | 40 | 3 | 1.4 | 1.4 | 1.4 |
| 21 | 9.01 522 | 28 | 9.05 568 | 33 | 0.34 432 | 9.95 954 | 6 | 39 | 4 | 1.9 | 1.9 | 1.8 |
| 22 | 9.01 550 | 28 | 9.05 602 | 34 | 0.34 398 | 9.95 948 | 5 | 38 | 5 | 2.4 | 2.3 | 2.2 |
| 23 | 9.01 578 | 28 | 9.05 636 | 34 | 0.34 364 | 9.95 942 | 6 | 37 | 6 | 2.9 | 2.8 | 2.7 |
| 24 | 9.01 606 | 28 | 9.05 669 | 33 | 0.34 331 | 9.95 937 | 5 | 36 | 7 | 3.4 | 3.3 | 3.2 |
| 25 | 9.01 634 | 28 | 9.05 703 | 34 | 0.34 297 | 9.95 931 | 6 | 35 | 8 | 3.9 | 3.7 | 3.6 |
| 26 | 9.01 662 | 27 | 9.05 736 | 34 | 0.34 264 | 9.95 925 | 5 | 34 | 9 | 4.4 | 4.2 | 4.0 |
| 27 | 9.01 689 | 28 | 9.05 770 | 33 | 0.34 230 | 9.95 920 | 6 | 33 | 10 | 4.8 | 4.7 | 4.5 |
| 28 | 9.01 717 | 28 | 9.05 803 | 33 | 0.34 197 | 9.95 914 | 6 | 32 | 20 | 9.7 | 9.3 | 9.0 |
| 29 | 9.01 745 | 28 | 9.05 837 | 33 | 0.34 163 | 9.95 908 | 6 | 31 | 30 | 14.5 | 14.0 | 13.5 |
| 30 | 9.01 773 | 28 | 9.05 870 | 34 | 0.34 130 | 9.95 902 | 5 | 30 | 40 | 19.3 | 18.7 | 18.0 |
| 31 | 9.01 800 | 27 | 9.05 904 | 33 | 0.34 096 | 9.95 897 | 6 | 29 | 50 | 24.2 | 23.3 | 22.5 |
| 32 | 9.01 828 | 28 | 9.05 937 | 34 | 0.34 063 | 9.95 891 | 5 | 28 | | | | |
| 33 | 9.01 856 | 28 | 9.05 971 | 34 | 0.34 029 | 9.95 885 | 6 | 27 | | | | |
| 34 | 9.01 883 | 27 | 9.06 004 | 34 | 0.33 996 | 9.95 879 | 6 | 26 | 1 | 0.1 | 0.1 | |
| 35 | 9.01 911 | 28 | 9.06 038 | 33 | 0.33 962 | 9.95 873 | 5 | 25 | 2 | 0.2 | 0.2 | |
| 36 | 9.01 939 | 27 | 9.06 071 | 33 | 0.33 929 | 9.95 868 | 6 | 24 | 3 | 0.3 | 0.2 | |
| 37 | 9.01 966 | 28 | 9.06 104 | 34 | 0.33 896 | 9.95 862 | 6 | 23 | 4 | 0.4 | 0.3 | |
| 38 | 9.01 994 | 27 | 9.06 138 | 33 | 0.33 862 | 9.95 856 | 6 | 22 | 5 | 0.5 | 0.4 | |
| 39 | 9.02 021 | 28 | 9.06 171 | 33 | 0.33 829 | 9.95 850 | 6 | 21 | 6 | 0.6 | 0.5 | |
| 40 | 9.02 049 | 28 | 9.06 204 | 34 | 0.33 796 | 9.95 844 | 5 | 20 | 7 | 0.7 | 0.6 | |
| 41 | 9.02 076 | 27 | 9.06 238 | 33 | 0.33 762 | 9.95 839 | 6 | 19 | 8 | 0.8 | 0.7 | |
| 42 | 9.02 104 | 28 | 9.06 271 | 33 | 0.33 729 | 9.95 833 | 6 | 18 | 9 | 0.9 | 0.8 | |
| 43 | 9.02 131 | 27 | 9.06 304 | 33 | 0.33 696 | 9.95 827 | 6 | 17 | 10 | 1.0 | 0.8 | |
| 44 | 9.02 159 | 28 | 9.06 337 | 34 | 0.33 663 | 9.95 821 | 6 | 16 | 20 | 2.0 | 1.7 | |
| 45 | 9.02 186 | 28 | 9.06 371 | 33 | 0.33 629 | 9.95 815 | 5 | 15 | 30 | 3.0 | 2.5 | |
| 46 | 9.02 214 | 27 | 9.06 404 | 33 | 0.33 596 | 9.95 810 | 6 | 14 | 40 | 4.0 | 3.3 | |
| 47 | 9.02 241 | 27 | 9.06 437 | 33 | 0.33 563 | 9.95 804 | 6 | 13 | 50 | 5.0 | 4.2 | |
| 48 | 9.02 268 | 28 | 9.06 470 | 33 | 0.33 530 | 9.95 798 | 6 | 12 | | | | |
| 49 | 9.02 296 | 27 | 9.06 503 | 34 | 0.33 497 | 9.95 792 | 6 | 11 | | | | |
| 50 | 9.02 323 | 27 | 9.06 537 | 33 | 0.33 463 | 9.95 786 | 6 | 10 | | | | |
| 51 | 9.02 350 | 27 | 9.06 570 | 33 | 0.33 430 | 9.95 780 | 5 | 9 | | | | |
| 52 | 9.02 377 | 28 | 9.06 603 | 33 | 0.33 397 | 9.95 775 | 6 | 8 | | | | |
| 53 | 9.02 405 | 27 | 9.06 636 | 33 | 0.33 364 | 9.95 769 | 6 | 7 | 0 | 34 | 33 | 34 |
| 54 | 9.02 432 | 27 | 9.06 669 | 33 | 0.33 331 | 9.95 763 | 6 | 6 | 1 | 2.8 | 2.8 | 3.4 |
| 55 | 9.02 459 | 27 | 9.06 702 | 33 | 0.33 298 | 9.95 757 | 6 | 5 | 2 | 8.5 | 8.2 | 10.2 |
| 56 | 9.02 486 | 27 | 9.06 735 | 33 | 0.33 265 | 9.95 751 | 6 | 4 | 3 | 14.2 | 13.8 | 17.0 |
| 57 | 9.02 513 | 28 | 9.06 768 | 33 | 0.33 232 | 9.95 745 | 6 | 3 | 4 | 19.8 | 19.2 | 23.8 |
| 58 | 9.02 541 | 27 | 9.06 801 | 33 | 0.33 199 | 9.95 739 | 6 | 2 | 5 | 25.5 | 24.8 | 30.6 |
| 59 | 9.02 568 | 27 | 9.06 834 | 33 | 0.33 166 | 9.95 733 | 6 | 1 | 6 | 31.2 | 30.2 | — |
| 60 | 9.02 595 | 27 | 9.06 867 | 33 | 0.33 133 | 9.95 728 | 5 | 0 | | | | |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P P | | | |

| ' | L Sin | d | L Tan | c d | L Cot | L Cos | d | P P | | |
|----|----------|----|----------|-----|----------|----------|----|-----|------|------|
| 0 | 9.62 595 | | 9.66 867 | | 0.33 133 | 9.95 728 | 60 | | | |
| 1 | 9.62 622 | 27 | 9.66 900 | 33 | 0.33 100 | 9.95 722 | 59 | | | |
| 2 | 9.62 649 | 27 | 9.66 933 | 33 | 0.33 067 | 9.95 716 | 58 | | 33 | 32 |
| 3 | 9.62 676 | 27 | 9.66 966 | 33 | 0.33 034 | 9.95 710 | 57 | 1 | 0.6 | 0.5 |
| 4 | 9.62 703 | 27 | 9.66 999 | 33 | 0.33 001 | 9.95 704 | 56 | 2 | 1.1 | 1.1 |
| 5 | 9.62 730 | 27 | 9.67 032 | 33 | 0.32 968 | 9.95 698 | 55 | 3 | 1.6 | 1.6 |
| 6 | 9.62 757 | 27 | 9.67 065 | 33 | 0.32 935 | 9.95 692 | 54 | 4 | 2.2 | 2.1 |
| 7 | 9.62 784 | 27 | 9.67 098 | 33 | 0.32 902 | 9.95 686 | 53 | 5 | 2.8 | 2.7 |
| 8 | 9.62 811 | 27 | 9.67 131 | 33 | 0.32 869 | 9.95 680 | 52 | 6 | 3.3 | 3.2 |
| 9 | 9.62 838 | 27 | 9.67 163 | 32 | 0.32 837 | 9.95 674 | 51 | 7 | 3.8 | 3.7 |
| 10 | 9.62 865 | 27 | 9.67 196 | 33 | 0.32 804 | 9.95 668 | 50 | 8 | 4.4 | 4.3 |
| 11 | 9.62 892 | 27 | 9.67 229 | 33 | 0.32 771 | 9.95 663 | 49 | 9 | 5.0 | 4.8 |
| 12 | 9.62 918 | 26 | 9.67 262 | 33 | 0.32 738 | 9.95 657 | 48 | 10 | 5.5 | 5.3 |
| 13 | 9.62 945 | 27 | 9.67 295 | 33 | 0.32 705 | 9.95 651 | 47 | 20 | 11.0 | 10.7 |
| 14 | 9.62 972 | 27 | 9.67 327 | 32 | 0.32 673 | 9.95 645 | 46 | 30 | 16.5 | 16.0 |
| 15 | 9.62 999 | 27 | 9.67 360 | 33 | 0.32 640 | 9.95 639 | 45 | 40 | 22.0 | 21.3 |
| 16 | 9.63 026 | 26 | 9.67 393 | 33 | 0.32 607 | 9.95 633 | 44 | 50 | 27.5 | 26.7 |
| 17 | 9.63 052 | 26 | 9.67 426 | 33 | 0.32 574 | 9.95 627 | 43 | | 27 | 26 |
| 18 | 9.63 079 | 27 | 9.67 458 | 32 | 0.32 542 | 9.95 621 | 42 | 1 | 0.4 | 0.4 |
| 19 | 9.63 106 | 27 | 9.67 491 | 33 | 0.32 509 | 9.95 615 | 41 | 2 | 0.9 | 0.9 |
| 20 | 9.63 133 | 27 | 9.67 524 | 33 | 0.32 476 | 9.95 609 | 40 | 3 | 1.4 | 1.3 |
| 21 | 9.63 159 | 26 | 9.67 556 | 32 | 0.32 444 | 9.95 603 | 39 | 4 | 1.8 | 1.7 |
| 22 | 9.63 186 | 27 | 9.67 589 | 33 | 0.32 411 | 9.95 597 | 38 | 5 | 2.2 | 2.2 |
| 23 | 9.63 213 | 26 | 9.67 622 | 32 | 0.32 378 | 9.95 591 | 37 | 6 | 2.7 | 2.6 |
| 24 | 9.63 239 | 27 | 9.67 654 | 33 | 0.32 346 | 9.95 585 | 36 | 7 | 3.2 | 3.0 |
| 25 | 9.63 266 | 26 | 9.67 687 | 32 | 0.32 313 | 9.95 579 | 35 | 8 | 3.6 | 3.5 |
| 26 | 9.63 292 | 27 | 9.67 719 | 33 | 0.32 281 | 9.95 573 | 34 | 9 | 4.0 | 3.9 |
| 27 | 9.63 319 | 26 | 9.67 752 | 32 | 0.32 248 | 9.95 567 | 33 | 10 | 4.5 | 4.3 |
| 28 | 9.63 345 | 27 | 9.67 785 | 33 | 0.32 215 | 9.95 561 | 32 | 20 | 9.0 | 8.7 |
| 29 | 9.63 372 | 26 | 9.67 817 | 32 | 0.32 183 | 9.95 555 | 31 | 30 | 13.5 | 13.0 |
| 30 | 9.63 398 | 27 | 9.67 850 | 33 | 0.32 150 | 9.95 549 | 30 | 40 | 18.0 | 17.3 |
| 31 | 9.63 425 | 26 | 9.67 882 | 32 | 0.32 118 | 9.95 543 | 29 | 50 | 22.5 | 21.7 |
| 32 | 9.63 451 | 27 | 9.67 915 | 33 | 0.32 085 | 9.95 537 | 28 | | 7 | 6 |
| 33 | 9.63 478 | 26 | 9.67 947 | 32 | 0.32 053 | 9.95 531 | 27 | 1 | 0.1 | 0.1 |
| 34 | 9.63 504 | 27 | 9.67 980 | 33 | 0.32 020 | 9.95 525 | 26 | 2 | 0.2 | 0.2 |
| 35 | 9.63 531 | 26 | 9.68 012 | 32 | 0.31 988 | 9.95 519 | 25 | 3 | 0.4 | 0.3 |
| 36 | 9.63 557 | 27 | 9.68 044 | 33 | 0.31 956 | 9.95 513 | 24 | 4 | 0.5 | 0.4 |
| 37 | 9.63 583 | 26 | 9.68 077 | 32 | 0.31 923 | 9.95 507 | 23 | 5 | 0.6 | 0.5 |
| 38 | 9.63 610 | 27 | 9.68 109 | 33 | 0.31 891 | 9.95 500 | 22 | 6 | 0.7 | 0.6 |
| 39 | 9.63 636 | 26 | 9.68 142 | 32 | 0.31 858 | 9.95 494 | 21 | 7 | 0.8 | 0.7 |
| 40 | 9.63 662 | 27 | 9.68 174 | 33 | 0.31 826 | 9.95 488 | 20 | 8 | 0.9 | 0.8 |
| 41 | 9.63 689 | 26 | 9.68 206 | 32 | 0.31 794 | 9.95 482 | 19 | 9 | 1.0 | 0.9 |
| 42 | 9.63 715 | 27 | 9.68 239 | 33 | 0.31 761 | 9.95 476 | 18 | 10 | 1.2 | 1.0 |
| 43 | 9.63 741 | 26 | 9.68 271 | 32 | 0.31 729 | 9.95 470 | 17 | 20 | 2.3 | 2.0 |
| 44 | 9.63 767 | 27 | 9.68 303 | 33 | 0.31 697 | 9.95 464 | 16 | 30 | 3.5 | 3.0 |
| 45 | 9.63 794 | 26 | 9.68 336 | 32 | 0.31 664 | 9.95 458 | 15 | 40 | 4.7 | 4.0 |
| 46 | 9.63 820 | 27 | 9.68 368 | 33 | 0.31 632 | 9.95 452 | 14 | 50 | 5.8 | 5.0 |
| 47 | 9.63 846 | 26 | 9.68 400 | 32 | 0.31 600 | 9.95 446 | 13 | | | |
| 48 | 9.63 872 | 27 | 9.68 432 | 33 | 0.31 568 | 9.95 440 | 12 | | | |
| 49 | 9.63 898 | 26 | 9.68 465 | 32 | 0.31 535 | 9.95 434 | 11 | | | |
| 50 | 9.63 924 | 27 | 9.68 497 | 33 | 0.31 503 | 9.95 427 | 10 | | 7 | 6 |
| 51 | 9.63 950 | 26 | 9.68 529 | 32 | 0.31 471 | 9.95 421 | 9 | | 32 | 33 |
| 52 | 9.63 976 | 27 | 9.68 561 | 33 | 0.31 439 | 9.95 415 | 8 | | | |
| 53 | 9.64 002 | 26 | 9.68 593 | 32 | 0.31 407 | 9.95 409 | 7 | 0 | 2.3 | 3.3 |
| 54 | 9.64 028 | 27 | 9.68 626 | 33 | 0.31 374 | 9.95 403 | 6 | 1 | 6.9 | 8.0 |
| 55 | 9.64 054 | 26 | 9.68 658 | 32 | 0.31 342 | 9.95 397 | 5 | 2 | 11.4 | 13.3 |
| 56 | 9.64 080 | 27 | 9.68 690 | 33 | 0.31 310 | 9.95 391 | 4 | 3 | 16.0 | 18.7 |
| 57 | 9.64 106 | 26 | 9.68 722 | 32 | 0.31 278 | 9.95 384 | 3 | 4 | 20.6 | 24.0 |
| 58 | 9.64 132 | 27 | 9.68 754 | 33 | 0.31 246 | 9.95 378 | 2 | 5 | 25.1 | 29.7 |
| 59 | 9.64 158 | 26 | 9.68 786 | 32 | 0.31 214 | 9.95 372 | 1 | 6 | 29.7 | — |
| 60 | 9.64 184 | 27 | 9.68 818 | 33 | 0.31 182 | 9.95 366 | 0 | 7 | — | — |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | P P | | |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|---|----|-------------------|
| 0 | 9.04 184 | 26 | 9.68 818 | 32 | 0.31 182 | 9.95 366 | 6 | 60 | |
| 1 | 9.04 210 | 26 | 9.68 850 | 32 | 0.31 150 | 9.95 360 | 6 | 59 | 32 31 |
| 2 | 9.04 236 | 26 | 9.68 882 | 32 | 0.31 118 | 9.95 354 | 6 | 58 | 1 0.5 0.5 |
| 3 | 9.04 262 | 26 | 9.68 914 | 32 | 0.31 086 | 9.95 348 | 6 | 57 | 2 1.1 1.0 |
| 4 | 9.04 288 | 25 | 9.68 946 | 32 | 0.31 054 | 9.95 341 | 7 | 56 | 3 1.6 1.6 |
| 5 | 9.04 313 | 26 | 9.68 978 | 32 | 0.31 022 | 9.95 335 | 6 | 55 | 4 2.1 2.1 |
| 6 | 9.04 339 | 26 | 9.69 010 | 32 | 0.30 990 | 9.95 329 | 6 | 54 | 5 2.7 2.6 |
| 7 | 9.04 365 | 26 | 9.69 042 | 32 | 0.30 958 | 9.95 323 | 6 | 53 | 6 3.2 3.1 |
| 8 | 9.04 391 | 26 | 9.69 074 | 32 | 0.30 926 | 9.95 317 | 6 | 52 | 7 3.7 3.6 |
| 9 | 9.04 417 | 26 | 9.69 106 | 32 | 0.30 894 | 9.95 310 | 7 | 51 | 8 4.3 4.1 |
| 10 | 9.04 442 | 25 | 9.69 138 | 32 | 0.30 862 | 9.95 304 | 6 | 50 | 9 4.8 4.6 |
| 11 | 9.04 468 | 26 | 9.69 170 | 32 | 0.30 830 | 9.95 298 | 6 | 49 | 10 5.3 5.2 |
| 12 | 9.04 494 | 26 | 9.69 202 | 32 | 0.30 798 | 9.95 292 | 6 | 48 | 20 10.7 10.3 |
| 13 | 9.04 519 | 25 | 9.69 234 | 32 | 0.30 766 | 9.95 286 | 6 | 47 | 30 16.0 15.5 |
| 14 | 9.04 545 | 26 | 9.69 266 | 32 | 0.30 734 | 9.95 279 | 7 | 46 | 40 21.3 20.7 |
| 15 | 9.04 571 | 25 | 9.69 298 | 31 | 0.30 702 | 9.95 273 | 6 | 45 | 50 26.7 25.8 |
| 16 | 9.04 596 | 26 | 9.69 329 | 32 | 0.30 671 | 9.95 267 | 6 | 44 | |
| 17 | 9.04 622 | 25 | 9.69 361 | 32 | 0.30 639 | 9.95 261 | 7 | 43 | 26 25 24 |
| 18 | 9.04 647 | 26 | 9.69 393 | 32 | 0.30 607 | 9.95 254 | 6 | 42 | 1 0.4 0.4 0.4 |
| 19 | 9.04 673 | 25 | 9.69 425 | 32 | 0.30 575 | 9.95 248 | 6 | 41 | 2 0.9 0.8 0.8 |
| 20 | 9.04 698 | 26 | 9.69 457 | 31 | 0.30 543 | 9.95 242 | 6 | 40 | 3 1.3 1.2 1.2 |
| 21 | 9.04 724 | 25 | 9.69 488 | 32 | 0.30 512 | 9.95 236 | 6 | 39 | 4 1.7 1.7 1.6 |
| 22 | 9.04 749 | 26 | 9.69 520 | 32 | 0.30 480 | 9.95 229 | 7 | 38 | 5 2.2 2.1 2.0 |
| 23 | 9.04 775 | 25 | 9.69 552 | 32 | 0.30 448 | 9.95 223 | 6 | 37 | 6 2.6 2.5 2.4 |
| 24 | 9.04 800 | 26 | 9.69 584 | 31 | 0.30 416 | 9.95 217 | 6 | 36 | 7 3.0 2.9 2.8 |
| 25 | 9.04 826 | 25 | 9.69 615 | 32 | 0.30 385 | 9.95 211 | 6 | 35 | 8 3.5 3.3 3.2 |
| 26 | 9.04 851 | 26 | 9.69 647 | 32 | 0.30 353 | 9.95 204 | 7 | 34 | 9 3.9 3.8 3.6 |
| 27 | 9.04 877 | 25 | 9.69 679 | 31 | 0.30 321 | 9.95 198 | 6 | 33 | 10 4.3 4.2 4.0 |
| 28 | 9.04 902 | 26 | 9.69 710 | 32 | 0.30 290 | 9.95 192 | 6 | 32 | 20 8.7 8.3 8.0 |
| 29 | 9.04 927 | 25 | 9.69 742 | 32 | 0.30 258 | 9.95 185 | 7 | 31 | 30 13.0 12.5 12.0 |
| 30 | 9.04 953 | 26 | 9.69 774 | 31 | 0.30 226 | 9.95 179 | 6 | 30 | 40 17.3 16.7 16.0 |
| 31 | 9.04 978 | 25 | 9.69 805 | 32 | 0.30 195 | 9.95 173 | 6 | 29 | 50 21.7 20.8 20.0 |
| 32 | 9.05 003 | 26 | 9.69 837 | 31 | 0.30 163 | 9.95 167 | 6 | 28 | |
| 33 | 9.05 029 | 25 | 9.69 868 | 32 | 0.30 132 | 9.95 160 | 7 | 27 | 7 6 |
| 34 | 9.05 054 | 26 | 9.69 900 | 32 | 0.30 100 | 9.95 154 | 6 | 26 | 1 0.1 0.1 |
| 35 | 9.05 079 | 25 | 9.69 932 | 31 | 0.30 068 | 9.95 148 | 6 | 25 | 2 0.2 0.2 |
| 36 | 9.05 104 | 26 | 9.69 963 | 32 | 0.30 037 | 9.95 141 | 7 | 24 | 3 0.4 0.3 |
| 37 | 9.05 130 | 25 | 9.69 995 | 31 | 0.30 005 | 9.95 135 | 6 | 23 | 4 0.5 0.4 |
| 38 | 9.05 155 | 26 | 9.70 026 | 32 | 0.29 974 | 9.95 129 | 6 | 22 | 5 0.6 0.5 |
| 39 | 9.05 180 | 25 | 9.70 058 | 31 | 0.29 942 | 9.95 122 | 7 | 21 | 6 0.7 0.6 |
| 40 | 9.05 205 | 26 | 9.70 089 | 32 | 0.29 911 | 9.95 116 | 6 | 20 | 7 0.8 0.7 |
| 41 | 9.05 230 | 25 | 9.70 121 | 31 | 0.29 879 | 9.95 110 | 6 | 19 | 8 0.9 0.8 |
| 42 | 9.05 255 | 26 | 9.70 152 | 32 | 0.29 848 | 9.95 103 | 7 | 18 | 9 1.0 0.9 |
| 43 | 9.05 281 | 25 | 9.70 184 | 31 | 0.29 816 | 9.95 097 | 6 | 17 | 10 1.2 1.0 |
| 44 | 9.05 306 | 26 | 9.70 215 | 32 | 0.29 785 | 9.95 090 | 7 | 16 | 20 2.3 2.0 |
| 45 | 9.05 331 | 25 | 9.70 247 | 31 | 0.29 753 | 9.95 084 | 6 | 15 | 30 3.5 3.0 |
| 46 | 9.05 356 | 26 | 9.70 278 | 32 | 0.29 722 | 9.95 078 | 6 | 14 | 40 4.7 4.0 |
| 47 | 9.05 381 | 25 | 9.70 309 | 31 | 0.29 691 | 9.95 071 | 7 | 13 | 50 5.8 5.0 |
| 48 | 9.05 406 | 26 | 9.70 341 | 32 | 0.29 659 | 9.95 065 | 6 | 12 | |
| 49 | 9.05 431 | 25 | 9.70 372 | 31 | 0.29 628 | 9.95 059 | 6 | 11 | |
| 50 | 9.05 456 | 26 | 9.70 404 | 32 | 0.29 596 | 9.95 052 | 7 | 10 | 7 7 6 |
| 51 | 9.05 481 | 25 | 9.70 435 | 31 | 0.29 565 | 9.95 046 | 6 | 9 | 1 32 31 32 |
| 52 | 9.05 506 | 26 | 9.70 466 | 32 | 0.29 534 | 9.95 039 | 7 | 8 | 0 2.3 2.2 2.7 |
| 53 | 9.05 531 | 25 | 9.70 498 | 31 | 0.29 502 | 9.95 033 | 6 | 7 | 1 6.9 6.6 8.0 |
| 54 | 9.05 556 | 24 | 9.70 529 | 32 | 0.29 471 | 9.95 027 | 7 | 6 | 2 11.4 11.1 13.3 |
| 55 | 9.05 580 | 25 | 9.70 560 | 31 | 0.29 440 | 9.95 020 | 6 | 5 | 3 16.0 15.5 18.7 |
| 56 | 9.05 605 | 26 | 9.70 592 | 32 | 0.29 408 | 9.95 014 | 7 | 4 | 4 20.6 19.9 24.0 |
| 57 | 9.05 630 | 25 | 9.70 623 | 31 | 0.29 377 | 9.95 007 | 6 | 3 | 5 25.1 24.4 29.3 |
| 58 | 9.05 655 | 26 | 9.70 654 | 32 | 0.29 346 | 9.95 001 | 7 | 2 | 6 20.7 28.8 — |
| 59 | 9.05 680 | 25 | 9.70 685 | 31 | 0.29 315 | 9.94 995 | 6 | 1 | |
| 60 | 9.05 705 | 26 | 9.70 717 | 32 | 0.29 283 | 9.94 988 | 7 | 0 | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|---|----|-----|
| 0 | 9.65 705 | | 9.70 717 | | 0.29 283 | 9.94 985 | | 60 | |
| 1 | 9.65 729 | 24 | 9.70 748 | 31 | 0.29 252 | 9.94 982 | 6 | 59 | |
| 2 | 9.65 754 | 25 | 9.70 779 | 31 | 0.29 221 | 9.94 975 | 7 | 58 | |
| 3 | 9.65 779 | 25 | 9.70 810 | 31 | 0.29 190 | 9.94 969 | 6 | 57 | |
| 4 | 9.65 804 | 24 | 9.70 841 | 32 | 0.29 159 | 9.94 962 | 7 | 56 | |
| 5 | 9.65 828 | 25 | 9.70 873 | 31 | 0.29 127 | 9.94 956 | 6 | 55 | |
| 6 | 9.65 853 | 25 | 9.70 904 | 31 | 0.29 096 | 9.94 949 | 7 | 54 | |
| 7 | 9.65 878 | 24 | 9.70 935 | 31 | 0.29 065 | 9.94 943 | 6 | 53 | |
| 8 | 9.65 902 | 25 | 9.70 966 | 31 | 0.29 034 | 9.94 936 | 7 | 52 | |
| 9 | 9.65 927 | 25 | 9.70 997 | 31 | 0.29 003 | 9.94 930 | 6 | 51 | |
| 10 | 9.65 952 | 24 | 9.71 028 | 31 | 0.28 972 | 9.94 923 | 7 | 50 | |
| 11 | 9.65 976 | 25 | 9.71 059 | 31 | 0.28 941 | 9.94 917 | 6 | 49 | |
| 12 | 9.66 001 | 24 | 9.71 090 | 31 | 0.28 910 | 9.94 911 | 7 | 48 | |
| 13 | 9.66 025 | 25 | 9.71 121 | 32 | 0.28 879 | 9.94 904 | 6 | 47 | |
| 14 | 9.66 050 | 25 | 9.71 153 | 31 | 0.28 847 | 9.94 898 | 7 | 46 | |
| 15 | 9.66 075 | 24 | 9.71 184 | 31 | 0.28 816 | 9.94 891 | 6 | 45 | |
| 16 | 9.66 099 | 25 | 9.71 215 | 31 | 0.28 785 | 9.94 885 | 7 | 44 | |
| 17 | 9.66 124 | 24 | 9.71 246 | 31 | 0.28 754 | 9.94 878 | 6 | 43 | |
| 18 | 9.66 148 | 25 | 9.71 277 | 31 | 0.28 723 | 9.94 871 | 7 | 42 | |
| 19 | 9.66 173 | 24 | 9.71 308 | 31 | 0.28 692 | 9.94 865 | 6 | 41 | |
| 20 | 9.66 197 | 24 | 9.71 339 | 31 | 0.28 661 | 9.94 858 | 7 | 40 | |
| 21 | 9.66 221 | 25 | 9.71 370 | 31 | 0.28 630 | 9.94 852 | 6 | 39 | |
| 22 | 9.66 246 | 24 | 9.71 401 | 31 | 0.28 599 | 9.94 845 | 7 | 38 | |
| 23 | 9.66 270 | 25 | 9.71 431 | 30 | 0.28 569 | 9.94 839 | 6 | 37 | |
| 24 | 9.66 295 | 24 | 9.71 462 | 31 | 0.28 538 | 9.94 832 | 7 | 36 | |
| 25 | 9.66 319 | 24 | 9.71 493 | 31 | 0.28 507 | 9.94 826 | 6 | 35 | |
| 26 | 9.66 343 | 25 | 9.71 524 | 31 | 0.28 476 | 9.94 819 | 7 | 34 | |
| 27 | 9.66 368 | 24 | 9.71 555 | 31 | 0.28 445 | 9.94 813 | 6 | 33 | |
| 28 | 9.66 392 | 24 | 9.71 586 | 31 | 0.28 414 | 9.94 806 | 7 | 32 | |
| 29 | 9.66 416 | 25 | 9.71 617 | 31 | 0.28 383 | 9.94 799 | 6 | 31 | |
| 30 | 9.66 441 | 24 | 9.71 648 | 31 | 0.28 352 | 9.94 793 | 7 | 30 | |
| 31 | 9.66 465 | 24 | 9.71 679 | 30 | 0.28 321 | 9.94 786 | 6 | 29 | |
| 32 | 9.66 489 | 24 | 9.71 709 | 31 | 0.28 291 | 9.94 780 | 7 | 28 | |
| 33 | 9.66 513 | 24 | 9.71 740 | 31 | 0.28 260 | 9.94 773 | 6 | 27 | |
| 34 | 9.66 537 | 25 | 9.71 771 | 31 | 0.28 229 | 9.94 767 | 7 | 26 | |
| 35 | 9.66 562 | 24 | 9.71 802 | 31 | 0.28 198 | 9.94 760 | 6 | 25 | |
| 36 | 9.66 586 | 24 | 9.71 833 | 30 | 0.28 167 | 9.94 753 | 7 | 24 | |
| 37 | 9.66 610 | 24 | 9.71 863 | 31 | 0.28 137 | 9.94 747 | 6 | 23 | |
| 38 | 9.66 634 | 24 | 9.71 894 | 31 | 0.28 106 | 9.94 740 | 7 | 22 | |
| 39 | 9.66 658 | 24 | 9.71 925 | 30 | 0.28 075 | 9.94 734 | 6 | 21 | |
| 40 | 9.66 682 | 24 | 9.71 955 | 31 | 0.28 045 | 9.94 727 | 7 | 20 | |
| 41 | 9.66 706 | 25 | 9.71 986 | 31 | 0.28 014 | 9.94 720 | 6 | 19 | |
| 42 | 9.66 731 | 24 | 9.72 017 | 31 | 0.27 983 | 9.94 714 | 7 | 18 | |
| 43 | 9.66 755 | 24 | 9.72 048 | 30 | 0.27 952 | 9.94 707 | 6 | 17 | |
| 44 | 9.66 779 | 24 | 9.72 078 | 31 | 0.27 922 | 9.94 700 | 7 | 16 | |
| 45 | 9.66 803 | 24 | 9.72 109 | 31 | 0.27 891 | 9.94 694 | 6 | 15 | |
| 46 | 9.66 827 | 24 | 9.72 140 | 30 | 0.27 860 | 9.94 687 | 7 | 14 | |
| 47 | 9.66 851 | 24 | 9.72 170 | 31 | 0.27 830 | 9.94 680 | 6 | 13 | |
| 48 | 9.66 875 | 24 | 9.72 201 | 30 | 0.27 799 | 9.94 674 | 7 | 12 | |
| 49 | 9.66 899 | 23 | 9.72 231 | 31 | 0.27 769 | 9.94 667 | 6 | 11 | |
| 50 | 9.66 922 | 24 | 9.72 262 | 31 | 0.27 738 | 9.94 660 | 7 | 10 | |
| 51 | 9.66 946 | 24 | 9.72 293 | 30 | 0.27 707 | 9.94 654 | 6 | 9 | |
| 52 | 9.66 970 | 24 | 9.72 323 | 31 | 0.27 677 | 9.94 647 | 7 | 8 | |
| 53 | 9.66 994 | 24 | 9.72 354 | 30 | 0.27 646 | 9.94 640 | 6 | 7 | |
| 54 | 9.67 018 | 24 | 9.72 384 | 31 | 0.27 616 | 9.94 634 | 7 | 6 | |
| 55 | 9.67 042 | 24 | 9.72 415 | 30 | 0.27 585 | 9.94 627 | 6 | 5 | |
| 56 | 9.67 066 | 24 | 9.72 445 | 31 | 0.27 555 | 9.94 620 | 7 | 4 | |
| 57 | 9.67 090 | 23 | 9.72 476 | 30 | 0.27 524 | 9.94 614 | 6 | 3 | |
| 58 | 9.67 113 | 24 | 9.72 506 | 31 | 0.27 494 | 9.94 607 | 7 | 2 | |
| 59 | 9.67 137 | 24 | 9.72 537 | 30 | 0.27 463 | 9.94 600 | 6 | 1 | |
| 60 | 9.67 161 | 24 | 9.72 567 | 30 | 0.27 433 | 9.94 593 | 7 | 0 | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|----|----|----------------|
| 0 | 9.07 161 | | 9.72 567 | | 0.27 433 | 9.94 593 | 60 | | |
| 1 | 9.07 185 | 24 | 9.72 598 | 31 | 0.27 402 | 9.94 587 | 59 | | |
| 2 | 9.07 208 | 23 | 9.72 628 | 30 | 0.27 372 | 9.94 580 | 58 | 1 | 0.5 0.5 0.5 |
| 3 | 9.07 232 | 24 | 9.72 659 | 31 | 0.27 341 | 9.94 573 | 57 | 2 | 1.0 1.0 1.0 |
| 4 | 9.07 256 | 24 | 9.72 689 | 30 | 0.27 311 | 9.94 567 | 56 | 3 | 1.6 1.5 1.4 |
| 5 | 9.07 280 | 24 | 9.72 720 | 31 | 0.27 280 | 9.94 560 | 55 | 4 | 2.1 2.0 1.9 |
| 6 | 9.07 303 | 23 | 9.72 750 | 30 | 0.27 250 | 9.94 553 | 54 | 5 | 2.6 2.5 2.4 |
| 7 | 9.07 327 | 24 | 9.72 780 | 30 | 0.27 220 | 9.94 546 | 53 | 6 | 3.1 3.0 2.9 |
| 8 | 9.07 350 | 23 | 9.72 811 | 31 | 0.27 189 | 9.94 540 | 52 | 7 | 3.6 3.5 3.4 |
| 9 | 9.07 374 | 24 | 9.72 841 | 30 | 0.27 159 | 9.94 533 | 51 | 8 | 4.1 4.0 3.9 |
| 10 | 9.07 398 | 23 | 9.72 872 | 31 | 0.27 128 | 9.94 526 | 50 | 9 | 4.6 4.5 4.4 |
| 11 | 9.07 421 | 23 | 9.72 902 | 30 | 0.27 098 | 9.94 519 | 49 | 10 | 5.2 5.0 4.8 |
| 12 | 9.07 445 | 24 | 9.72 932 | 30 | 0.27 068 | 9.94 513 | 48 | 20 | 10.3 10.0 9.7 |
| 13 | 9.07 468 | 23 | 9.72 963 | 31 | 0.27 037 | 9.94 506 | 47 | 30 | 15.5 15.0 14.5 |
| 14 | 9.07 492 | 24 | 9.72 993 | 30 | 0.27 007 | 9.94 499 | 46 | 40 | 20.7 20.0 19.3 |
| 15 | 9.07 515 | 23 | 9.73 023 | 30 | 0.26 977 | 9.94 492 | 45 | 50 | 25.8 25.0 24.2 |
| 16 | 9.07 539 | 24 | 9.73 054 | 31 | 0.26 946 | 9.94 485 | 44 | | |
| 17 | 9.07 562 | 23 | 9.73 084 | 30 | 0.26 916 | 9.94 479 | 43 | | |
| 18 | 9.07 586 | 24 | 9.73 114 | 30 | 0.26 886 | 9.94 472 | 42 | 1 | 0.4 0.3 0.4 |
| 19 | 9.07 609 | 23 | 9.73 144 | 30 | 0.26 856 | 9.94 465 | 41 | 2 | 0.8 0.8 0.7 |
| 20 | 9.07 633 | 24 | 9.73 175 | 31 | 0.26 825 | 9.94 458 | 40 | 3 | 1.2 1.2 1.1 |
| 21 | 9.07 656 | 23 | 9.73 205 | 30 | 0.26 795 | 9.94 451 | 39 | 4 | 1.6 1.5 1.5 |
| 22 | 9.07 680 | 24 | 9.73 235 | 30 | 0.26 765 | 9.94 445 | 38 | 5 | 2.0 1.9 1.8 |
| 23 | 9.07 703 | 23 | 9.73 265 | 30 | 0.26 735 | 9.94 438 | 37 | 6 | 2.4 2.3 2.2 |
| 24 | 9.07 726 | 23 | 9.73 295 | 30 | 0.26 705 | 9.94 431 | 36 | 7 | 2.8 2.7 2.6 |
| 25 | 9.07 750 | 24 | 9.73 326 | 31 | 0.26 674 | 9.94 424 | 35 | 8 | 3.2 3.1 2.9 |
| 26 | 9.07 773 | 23 | 9.73 356 | 30 | 0.26 644 | 9.94 417 | 34 | 9 | 3.6 3.4 3.3 |
| 27 | 9.07 796 | 23 | 9.73 386 | 30 | 0.26 614 | 9.94 410 | 33 | 10 | 4.0 3.8 3.7 |
| 28 | 9.07 820 | 24 | 9.73 416 | 30 | 0.26 584 | 9.94 404 | 32 | 20 | 8.0 7.7 7.3 |
| 29 | 9.07 843 | 23 | 9.73 446 | 30 | 0.26 554 | 9.94 397 | 31 | 30 | 12.0 11.5 11.0 |
| 30 | 9.07 866 | 23 | 9.73 476 | 30 | 0.26 524 | 9.94 390 | 30 | 40 | 16.0 15.3 14.7 |
| 31 | 9.07 890 | 24 | 9.73 507 | 31 | 0.26 493 | 9.94 383 | 29 | 50 | 20.0 19.2 18.3 |
| 32 | 9.07 913 | 23 | 9.73 537 | 30 | 0.26 463 | 9.94 376 | 28 | | |
| 33 | 9.07 936 | 23 | 9.73 567 | 30 | 0.26 433 | 9.94 369 | 27 | | |
| 34 | 9.07 959 | 23 | 9.73 597 | 30 | 0.26 403 | 9.94 362 | 26 | 1 | 0.1 0.1 0.1 |
| 35 | 9.07 982 | 23 | 9.73 627 | 30 | 0.26 373 | 9.94 355 | 25 | 2 | 0.2 0.2 0.2 |
| 36 | 9.08 006 | 24 | 9.73 657 | 30 | 0.26 343 | 9.94 349 | 24 | 3 | 0.4 0.3 0.3 |
| 37 | 9.08 029 | 23 | 9.73 687 | 30 | 0.26 313 | 9.94 342 | 23 | 4 | 0.5 0.4 0.4 |
| 38 | 9.08 052 | 23 | 9.73 717 | 30 | 0.26 283 | 9.94 335 | 22 | 5 | 0.6 0.5 0.5 |
| 39 | 9.08 075 | 23 | 9.73 747 | 30 | 0.26 253 | 9.94 328 | 21 | 6 | 0.7 0.6 0.6 |
| 40 | 9.08 098 | 23 | 9.73 777 | 30 | 0.26 223 | 9.94 321 | 20 | 7 | 0.8 0.7 0.7 |
| 41 | 9.08 121 | 23 | 9.73 807 | 30 | 0.26 193 | 9.94 314 | 19 | 8 | 0.9 0.8 0.8 |
| 42 | 9.08 144 | 23 | 9.73 837 | 30 | 0.26 163 | 9.94 307 | 18 | 9 | 1.0 0.9 0.9 |
| 43 | 9.08 167 | 23 | 9.73 867 | 30 | 0.26 133 | 9.94 300 | 17 | 10 | 1.2 1.0 1.0 |
| 44 | 9.08 190 | 23 | 9.73 897 | 30 | 0.26 103 | 9.94 293 | 16 | 20 | 2.3 2.0 2.0 |
| 45 | 9.08 213 | 23 | 9.73 927 | 30 | 0.26 073 | 9.94 286 | 15 | 30 | 3.5 3.0 3.0 |
| 46 | 9.08 237 | 24 | 9.73 957 | 30 | 0.26 043 | 9.94 279 | 14 | 40 | 4.7 4.0 4.0 |
| 47 | 9.08 260 | 23 | 9.73 987 | 30 | 0.26 013 | 9.94 273 | 13 | 50 | 5.8 5.0 5.0 |
| 48 | 9.08 283 | 23 | 9.74 017 | 30 | 0.25 983 | 9.94 266 | 12 | | |
| 49 | 9.08 305 | 22 | 9.74 047 | 30 | 0.25 953 | 9.94 259 | 11 | | |
| 50 | 9.08 328 | 23 | 9.74 077 | 30 | 0.25 923 | 9.94 252 | 10 | | |
| 51 | 9.08 351 | 23 | 9.74 107 | 30 | 0.25 893 | 9.94 245 | 9 | | |
| 52 | 9.08 374 | 23 | 9.74 137 | 30 | 0.25 863 | 9.94 238 | 8 | | |
| 53 | 9.08 397 | 23 | 9.74 166 | 29 | 0.25 834 | 9.94 231 | 7 | 0 | 2.2 2.6 2.5 |
| 54 | 9.08 420 | 23 | 9.74 196 | 30 | 0.25 804 | 9.94 224 | 6 | 1 | 6.6 7.8 7.5 |
| 55 | 9.08 443 | 23 | 9.74 226 | 30 | 0.25 774 | 9.94 217 | 5 | 2 | 11.1 12.9 12.5 |
| 56 | 9.08 466 | 23 | 9.74 256 | 30 | 0.25 744 | 9.94 210 | 4 | 3 | 15.5 18.1 17.5 |
| 57 | 9.08 489 | 23 | 9.74 286 | 30 | 0.25 714 | 9.94 203 | 3 | 4 | 19.9 23.2 22.5 |
| 58 | 9.08 512 | 23 | 9.74 316 | 29 | 0.25 684 | 9.94 196 | 2 | 5 | 24.4 28.4 27.5 |
| 59 | 9.08 534 | 22 | 9.74 345 | 30 | 0.25 655 | 9.94 189 | 1 | 6 | 28.8 — — |
| 60 | 9.08 557 | 23 | 9.74 375 | 29 | 0.25 625 | 9.94 182 | 0 | 7 | |
| | L Cos | d | L Tan | e d | L Sin | d | | | P P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|---|----|-------------------|
| 0 | 9.68 557 | 23 | 9.74 375 | 30 | 0.25 625 | 9.94 182 | 7 | 60 | |
| 1 | 9.68 580 | 23 | 9.74 405 | 30 | 0.25 595 | 9.94 175 | 7 | 59 | |
| 2 | 9.68 603 | 22 | 9.74 435 | 30 | 0.25 565 | 9.94 168 | 7 | 58 | 30 29 23 |
| 3 | 9.68 625 | 23 | 9.74 465 | 30 | 0.25 535 | 9.94 161 | 7 | 57 | 1 0.5 0.5 0.4 |
| 4 | 9.68 648 | 23 | 9.74 494 | 29 | 0.25 506 | 9.94 154 | 7 | 56 | 2 1.0 1.0 0.8 |
| 5 | 9.68 671 | 23 | 9.74 524 | 30 | 0.25 476 | 9.94 147 | 7 | 55 | 3 1.5 1.4 1.2 |
| 6 | 9.68 694 | 22 | 9.74 554 | 30 | 0.25 446 | 9.94 140 | 7 | 54 | 4 2.0 1.9 1.5 |
| 7 | 9.68 716 | 23 | 9.74 583 | 29 | 0.25 417 | 9.94 133 | 7 | 53 | 5 2.5 2.4 1.9 |
| 8 | 9.68 739 | 23 | 9.74 613 | 30 | 0.25 387 | 9.94 126 | 7 | 52 | 6 3.0 2.9 2.3 |
| 9 | 9.68 762 | 23 | 9.74 643 | 30 | 0.25 357 | 9.94 119 | 7 | 51 | 7 3.5 3.4 2.7 |
| 10 | 9.68 784 | 22 | 9.74 673 | 30 | 0.25 327 | 9.94 112 | 7 | 50 | 8 4.0 3.9 3.1 |
| 11 | 9.68 807 | 23 | 9.74 702 | 29 | 0.25 298 | 9.94 105 | 7 | 49 | 9 4.5 4.4 3.4 |
| 12 | 9.68 829 | 22 | 9.74 732 | 30 | 0.25 268 | 9.94 98 | 7 | 48 | 10 5.0 4.8 3.8 |
| 13 | 9.68 852 | 23 | 9.74 762 | 30 | 0.25 238 | 9.94 90 | 7 | 47 | 20 10.0 9.7 7.7 |
| 14 | 9.68 875 | 22 | 9.74 791 | 29 | 0.25 209 | 9.94 83 | 7 | 46 | 30 15.0 14.5 11.5 |
| 15 | 9.68 897 | 23 | 9.74 821 | 30 | 0.25 179 | 9.94 76 | 7 | 45 | 40 20.0 19.3 15.3 |
| 16 | 9.68 920 | 22 | 9.74 851 | 30 | 0.25 149 | 9.94 69 | 7 | 44 | 50 25.0 24.2 19.2 |
| 17 | 9.68 942 | 22 | 9.74 880 | 29 | 0.25 120 | 9.94 62 | 7 | 43 | |
| 18 | 9.68 965 | 22 | 9.74 910 | 30 | 0.25 90 | 9.94 55 | 7 | 42 | 22 8 7 |
| 19 | 9.68 987 | 23 | 9.74 939 | 30 | 0.25 61 | 9.94 48 | 7 | 41 | 1 0.4 0.1 0.1 |
| 20 | 9.69 010 | 22 | 9.74 969 | 29 | 0.25 31 | 9.94 41 | 7 | 40 | 2 0.7 0.3 0.2 |
| 21 | 9.69 032 | 23 | 9.74 998 | 30 | 0.25 002 | 9.94 34 | 7 | 39 | 3 1.1 0.4 0.4 |
| 22 | 9.69 055 | 22 | 9.75 028 | 30 | 0.24 972 | 9.94 27 | 7 | 38 | 4 1.5 0.5 0.5 |
| 23 | 9.69 077 | 23 | 9.75 058 | 29 | 0.24 942 | 9.94 20 | 7 | 37 | 5 1.8 0.7 0.6 |
| 24 | 9.69 100 | 22 | 9.75 087 | 30 | 0.24 913 | 9.94 12 | 7 | 36 | 6 2.2 0.8 0.7 |
| 25 | 9.69 122 | 22 | 9.75 117 | 29 | 0.24 883 | 9.94 05 | 7 | 35 | 7 2.6 0.9 0.8 |
| 26 | 9.69 144 | 23 | 9.75 146 | 30 | 0.24 854 | 9.93 98 | 7 | 34 | 8 2.9 1.1 0.9 |
| 27 | 9.69 167 | 22 | 9.75 176 | 29 | 0.24 824 | 9.93 91 | 7 | 33 | 9 3.3 1.2 1.0 |
| 28 | 9.69 189 | 23 | 9.75 205 | 29 | 0.24 795 | 9.93 84 | 7 | 32 | 10 3.7 1.3 1.2 |
| 29 | 9.69 212 | 22 | 9.75 235 | 30 | 0.24 765 | 9.93 77 | 7 | 31 | 20 7.3 2.7 2.3 |
| 30 | 9.69 234 | 22 | 9.75 264 | 29 | 0.24 736 | 9.93 70 | 7 | 30 | 30 11.0 4.0 3.5 |
| 31 | 9.69 256 | 23 | 9.75 294 | 30 | 0.24 706 | 9.93 63 | 7 | 29 | 40 14.7 5.3 4.7 |
| 32 | 9.69 279 | 22 | 9.75 323 | 29 | 0.24 677 | 9.93 55 | 7 | 28 | 50 18.3 6.7 5.8 |
| 33 | 9.69 301 | 22 | 9.75 353 | 30 | 0.24 647 | 9.93 48 | 7 | 27 | |
| 34 | 9.69 323 | 22 | 9.75 382 | 29 | 0.24 618 | 9.93 41 | 7 | 26 | |
| 35 | 9.69 345 | 23 | 9.75 411 | 30 | 0.24 589 | 9.93 34 | 7 | 25 | |
| 36 | 9.69 368 | 22 | 9.75 441 | 29 | 0.24 559 | 9.93 27 | 7 | 24 | |
| 37 | 9.69 390 | 22 | 9.75 470 | 30 | 0.24 530 | 9.93 20 | 7 | 23 | 8 8 |
| 38 | 9.69 412 | 22 | 9.75 500 | 29 | 0.24 500 | 9.93 12 | 7 | 22 | 30 29 |
| 39 | 9.69 434 | 22 | 9.75 529 | 29 | 0.24 471 | 9.93 05 | 7 | 21 | 0 1.9 1.8 |
| 40 | 9.69 456 | 23 | 9.75 558 | 30 | 0.24 442 | 9.93 98 | 7 | 20 | 1 5.6 5.4 |
| 41 | 9.69 479 | 22 | 9.75 588 | 29 | 0.24 412 | 9.93 91 | 7 | 19 | 2 9.4 9.1 |
| 42 | 9.69 501 | 22 | 9.75 617 | 30 | 0.24 383 | 9.93 84 | 7 | 18 | 3 13.1 12.7 |
| 43 | 9.69 523 | 22 | 9.75 647 | 29 | 0.24 353 | 9.93 76 | 7 | 17 | 4 16.9 16.3 |
| 44 | 9.69 545 | 22 | 9.75 676 | 29 | 0.24 324 | 9.93 69 | 7 | 16 | 5 20.6 19.9 |
| 45 | 9.69 567 | 22 | 9.75 705 | 30 | 0.24 295 | 9.93 62 | 7 | 15 | 6 24.4 23.6 |
| 46 | 9.69 589 | 22 | 9.75 735 | 29 | 0.24 265 | 9.93 55 | 7 | 14 | 7 28.1 27.2 |
| 47 | 9.69 611 | 22 | 9.75 764 | 29 | 0.24 236 | 9.93 47 | 7 | 13 | |
| 48 | 9.69 633 | 22 | 9.75 793 | 29 | 0.24 207 | 9.93 40 | 7 | 12 | |
| 49 | 9.69 655 | 22 | 9.75 822 | 29 | 0.24 178 | 9.93 33 | 7 | 11 | |
| 50 | 9.69 677 | 22 | 9.75 852 | 30 | 0.24 148 | 9.93 26 | 7 | 10 | 7 7 |
| 51 | 9.69 699 | 22 | 9.75 881 | 29 | 0.24 119 | 9.93 19 | 7 | 9 | 30 29 |
| 52 | 9.69 721 | 22 | 9.75 910 | 29 | 0.24 090 | 9.93 11 | 7 | 8 | 0 2.1 2.1 |
| 53 | 9.69 743 | 22 | 9.75 939 | 30 | 0.24 061 | 9.93 04 | 7 | 7 | 1 6.4 6.2 |
| 54 | 9.69 765 | 22 | 9.75 969 | 29 | 0.24 031 | 9.93 97 | 7 | 6 | 2 10.7 10.4 |
| 55 | 9.69 787 | 22 | 9.75 998 | 29 | 0.24 002 | 9.93 90 | 7 | 5 | 3 15.0 14.5 |
| 56 | 9.69 809 | 22 | 9.76 027 | 29 | 0.23 973 | 9.93 82 | 7 | 4 | 4 19.3 18.6 |
| 57 | 9.69 831 | 22 | 9.76 056 | 30 | 0.23 944 | 9.93 75 | 7 | 3 | 5 23.6 22.8 |
| 58 | 9.69 853 | 22 | 9.76 086 | 29 | 0.23 914 | 9.93 68 | 7 | 2 | 6 27.9 26.9 |
| 59 | 9.69 875 | 22 | 9.76 115 | 29 | 0.23 885 | 9.93 60 | 7 | 1 | |
| 60 | 9.69 897 | 22 | 9.76 144 | 29 | 0.23 856 | 9.93 53 | 7 | 0 | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|---|----|-------------------|
| 0 | 0.69 897 | 22 | 0.76 144 | 29 | 0.23 856 | 0.93 753 | 7 | 60 | |
| 1 | 0.69 910 | 22 | 0.76 173 | 29 | 0.23 827 | 0.93 746 | 8 | 59 | 30 29 28 |
| 2 | 0.69 941 | 22 | 0.76 202 | 29 | 0.23 798 | 0.93 738 | 8 | 58 | 1 0.5 0.5 0.5 |
| 3 | 0.69 963 | 21 | 0.76 231 | 29 | 0.23 769 | 0.93 731 | 7 | 57 | 2 1.0 1.0 0.9 |
| 4 | 0.69 984 | 22 | 0.76 261 | 29 | 0.23 739 | 0.93 724 | 7 | 56 | 3 1.5 1.4 1.4 |
| 5 | 0.70 006 | 22 | 0.76 290 | 29 | 0.23 710 | 0.93 717 | 7 | 55 | 4 2.0 1.9 1.9 |
| 6 | 0.70 028 | 22 | 0.76 319 | 29 | 0.23 681 | 0.93 709 | 8 | 54 | 5 2.5 2.4 2.3 |
| 7 | 0.70 050 | 22 | 0.76 348 | 29 | 0.23 652 | 0.93 702 | 7 | 53 | 6 3.0 2.9 2.8 |
| 8 | 0.70 072 | 22 | 0.76 377 | 29 | 0.23 623 | 0.93 695 | 7 | 52 | 7 3.5 3.4 3.3 |
| 9 | 0.70 093 | 21 | 0.76 406 | 29 | 0.23 594 | 0.93 687 | 8 | 51 | 8 4.0 3.9 3.7 |
| 10 | 0.70 115 | 22 | 0.76 435 | 29 | 0.23 565 | 0.93 680 | 7 | 50 | 9 4.5 4.4 4.2 |
| 11 | 0.70 137 | 22 | 0.76 464 | 29 | 0.23 536 | 0.93 673 | 8 | 49 | 10 5.0 4.8 4.7 |
| 12 | 0.70 159 | 22 | 0.76 493 | 29 | 0.23 507 | 0.93 665 | 8 | 48 | 20 10.0 9.7 9.3 |
| 13 | 0.70 180 | 21 | 0.76 522 | 29 | 0.23 478 | 0.93 658 | 7 | 47 | 30 15.0 14.5 14.0 |
| 14 | 0.70 202 | 22 | 0.76 551 | 29 | 0.23 449 | 0.93 650 | 8 | 46 | 40 20.0 19.3 18.7 |
| 15 | 0.70 224 | 22 | 0.76 580 | 29 | 0.23 420 | 0.93 643 | 7 | 45 | 50 25.0 24.2 23.3 |
| 16 | 0.70 245 | 21 | 0.76 609 | 29 | 0.23 391 | 0.93 636 | 7 | 44 | |
| 17 | 0.70 267 | 22 | 0.76 639 | 30 | 0.23 361 | 0.93 628 | 8 | 43 | 22 21 |
| 18 | 0.70 288 | 21 | 0.76 668 | 29 | 0.23 332 | 0.93 621 | 7 | 42 | 1 0.4 0.4 |
| 19 | 0.70 310 | 22 | 0.76 697 | 29 | 0.23 303 | 0.93 614 | 7 | 41 | 2 0.7 0.7 |
| 20 | 0.70 332 | 22 | 0.76 725 | 28 | 0.23 275 | 0.93 606 | 8 | 40 | 3 1.1 1.0 |
| 21 | 0.70 353 | 21 | 0.76 754 | 29 | 0.23 246 | 0.93 599 | 7 | 39 | 4 1.5 1.4 |
| 22 | 0.70 375 | 22 | 0.76 783 | 29 | 0.23 217 | 0.93 591 | 8 | 38 | 5 1.8 1.8 |
| 23 | 0.70 396 | 21 | 0.76 812 | 29 | 0.23 188 | 0.93 584 | 7 | 37 | 6 2.2 2.1 |
| 24 | 0.70 418 | 22 | 0.76 841 | 29 | 0.23 159 | 0.93 577 | 7 | 36 | 7 2.6 2.4 |
| 25 | 0.70 439 | 21 | 0.76 870 | 29 | 0.23 130 | 0.93 569 | 8 | 35 | 8 2.9 2.8 |
| 26 | 0.70 461 | 22 | 0.76 899 | 29 | 0.23 101 | 0.93 562 | 7 | 34 | 9 3.3 3.2 |
| 27 | 0.70 482 | 21 | 0.76 928 | 29 | 0.23 072 | 0.93 554 | 8 | 33 | 10 3.7 3.5 |
| 28 | 0.70 504 | 22 | 0.76 957 | 29 | 0.23 043 | 0.93 547 | 7 | 32 | 20 7.3 7.0 |
| 29 | 0.70 525 | 21 | 0.76 986 | 29 | 0.23 014 | 0.93 539 | 8 | 31 | 30 11.0 10.5 |
| 30 | 0.70 547 | 22 | 0.77 015 | 29 | 0.22 985 | 0.93 532 | 7 | 30 | 40 14.7 14.0 |
| 31 | 0.70 568 | 21 | 0.77 044 | 29 | 0.22 956 | 0.93 525 | 8 | 29 | 50 18.3 17.5 |
| 32 | 0.70 590 | 22 | 0.77 073 | 29 | 0.22 927 | 0.93 517 | 7 | 28 | |
| 33 | 0.70 611 | 21 | 0.77 101 | 28 | 0.22 899 | 0.93 510 | 8 | 27 | 8 7 |
| 34 | 0.70 633 | 22 | 0.77 130 | 29 | 0.22 870 | 0.93 502 | 7 | 26 | 1 0.1 0.1 |
| 35 | 0.70 654 | 21 | 0.77 159 | 29 | 0.22 841 | 0.93 495 | 8 | 25 | 2 0.3 0.2 |
| 36 | 0.70 675 | 22 | 0.77 188 | 29 | 0.22 812 | 0.93 487 | 7 | 24 | 3 0.4 0.4 |
| 37 | 0.70 697 | 21 | 0.77 217 | 29 | 0.22 783 | 0.93 480 | 8 | 23 | 4 0.5 0.5 |
| 38 | 0.70 718 | 22 | 0.77 246 | 29 | 0.22 754 | 0.93 472 | 7 | 22 | 5 0.7 0.6 |
| 39 | 0.70 739 | 21 | 0.77 274 | 28 | 0.22 726 | 0.93 465 | 8 | 21 | 6 0.8 0.7 |
| 40 | 0.70 761 | 22 | 0.77 303 | 29 | 0.22 697 | 0.93 457 | 7 | 20 | 7 0.9 0.8 |
| 41 | 0.70 782 | 21 | 0.77 332 | 29 | 0.22 668 | 0.93 450 | 8 | 19 | 8 1.1 0.9 |
| 42 | 0.70 803 | 22 | 0.77 361 | 29 | 0.22 639 | 0.93 442 | 7 | 18 | 9 1.2 1.0 |
| 43 | 0.70 824 | 21 | 0.77 390 | 29 | 0.22 610 | 0.93 435 | 8 | 17 | 10 1.3 1.2 |
| 44 | 0.70 846 | 22 | 0.77 418 | 28 | 0.22 582 | 0.93 427 | 7 | 16 | 20 2.7 2.3 |
| 45 | 0.70 867 | 21 | 0.77 447 | 29 | 0.22 553 | 0.93 420 | 8 | 15 | 30 4.0 3.5 |
| 46 | 0.70 888 | 22 | 0.77 476 | 29 | 0.22 524 | 0.93 412 | 7 | 14 | 40 5.3 4.7 |
| 47 | 0.70 909 | 21 | 0.77 505 | 29 | 0.22 495 | 0.93 405 | 8 | 13 | 50 6.7 5.8 |
| 48 | 0.70 931 | 22 | 0.77 533 | 28 | 0.22 467 | 0.93 397 | 7 | 12 | |
| 49 | 0.70 952 | 21 | 0.77 562 | 29 | 0.22 438 | 0.93 390 | 8 | 11 | 7 7 7 |
| 50 | 0.70 973 | 22 | 0.77 591 | 29 | 0.22 409 | 0.93 382 | 7 | 10 | 30 29 28 |
| 51 | 0.70 994 | 21 | 0.77 619 | 28 | 0.22 381 | 0.93 375 | 8 | 9 | 0 2.1 2.1 2.0 |
| 52 | 0.71 015 | 22 | 0.77 648 | 29 | 0.22 352 | 0.93 367 | 7 | 8 | 1 6.4 6.2 6.0 |
| 53 | 0.71 036 | 21 | 0.77 677 | 29 | 0.22 323 | 0.93 360 | 8 | 7 | 2 10.7 10.4 10.0 |
| 54 | 0.71 058 | 22 | 0.77 706 | 29 | 0.22 294 | 0.93 352 | 7 | 6 | 3 15.0 14.5 14.0 |
| 55 | 0.71 079 | 21 | 0.77 734 | 28 | 0.22 266 | 0.93 344 | 8 | 5 | 4 19.3 18.6 18.0 |
| 56 | 0.71 100 | 22 | 0.77 763 | 29 | 0.22 237 | 0.93 337 | 7 | 4 | 5 23.6 22.8 22.0 |
| 57 | 0.71 121 | 21 | 0.77 791 | 28 | 0.22 209 | 0.93 329 | 8 | 3 | 6 27.9 26.9 26.0 |
| 58 | 0.71 142 | 22 | 0.77 820 | 29 | 0.22 180 | 0.93 322 | 7 | 2 | |
| 59 | 0.71 163 | 21 | 0.77 849 | 29 | 0.22 151 | 0.93 314 | 8 | 1 | |
| 60 | 0.71 184 | 22 | 0.77 877 | 28 | 0.22 123 | 0.93 307 | 7 | 0 | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|----|----------|----------|---|----|----|------|
| 0 | 9.71 184 | | 9.77 877 | | 9.22 123 | 9.93 307 | | 60 | | |
| 1 | 9.71 205 | 21 | 9.77 906 | 29 | 9.22 094 | 9.93 299 | 8 | 59 | 29 | 28 |
| 2 | 9.71 226 | 21 | 9.77 935 | 28 | 9.22 065 | 9.93 291 | 8 | 58 | 1 | 0.5 |
| 3 | 9.71 247 | 21 | 9.77 963 | 29 | 9.22 037 | 9.93 284 | 7 | 57 | 2 | 1.0 |
| 4 | 9.71 268 | 21 | 9.77 992 | 28 | 9.22 008 | 9.93 276 | 8 | 56 | 3 | 1.4 |
| 5 | 9.71 289 | 21 | 9.78 020 | 29 | 9.21 980 | 9.93 269 | 8 | 55 | 4 | 1.9 |
| 6 | 9.71 310 | 21 | 9.78 049 | 28 | 9.21 951 | 9.93 261 | 8 | 54 | 5 | 2.4 |
| 7 | 9.71 331 | 21 | 9.78 077 | 29 | 9.21 923 | 9.93 253 | 7 | 53 | 6 | 2.9 |
| 8 | 9.71 352 | 21 | 9.78 106 | 29 | 9.21 894 | 9.93 246 | 8 | 52 | 7 | 3.4 |
| 9 | 9.71 373 | 21 | 9.78 135 | 28 | 9.21 865 | 9.93 238 | 8 | 51 | 8 | 3.9 |
| 10 | 9.71 393 | 20 | 9.78 163 | 29 | 9.21 837 | 9.93 230 | 8 | 50 | 9 | 4.4 |
| 11 | 9.71 414 | 21 | 9.78 192 | 28 | 9.21 808 | 9.93 223 | 7 | 49 | 10 | 4.8 |
| 12 | 9.71 435 | 21 | 9.78 220 | 29 | 9.21 780 | 9.93 215 | 8 | 48 | 20 | 9.7 |
| 13 | 9.71 456 | 21 | 9.78 249 | 28 | 9.21 751 | 9.93 207 | 8 | 47 | 30 | 14.5 |
| 14 | 9.71 477 | 21 | 9.78 277 | 29 | 9.21 723 | 9.93 200 | 7 | 46 | 40 | 19.3 |
| 15 | 9.71 498 | 21 | 9.78 306 | 28 | 9.21 694 | 9.93 192 | 8 | 45 | 50 | 24.2 |
| 16 | 9.71 519 | 20 | 9.78 334 | 29 | 9.21 666 | 9.93 184 | 8 | 44 | | |
| 17 | 9.71 539 | 21 | 9.78 363 | 28 | 9.21 637 | 9.93 177 | 7 | 43 | 21 | 20 |
| 18 | 9.71 560 | 21 | 9.78 391 | 28 | 9.21 609 | 9.93 169 | 8 | 42 | 1 | 0.4 |
| 19 | 9.71 581 | 21 | 9.78 419 | 29 | 9.21 581 | 9.93 161 | 8 | 41 | 2 | 0.7 |
| 20 | 9.71 602 | 20 | 9.78 448 | 28 | 9.21 552 | 9.93 154 | 7 | 40 | 3 | 1.0 |
| 21 | 9.71 622 | 21 | 9.78 476 | 29 | 9.21 524 | 9.93 146 | 8 | 39 | 4 | 1.4 |
| 22 | 9.71 643 | 21 | 9.78 505 | 28 | 9.21 495 | 9.93 138 | 8 | 38 | 5 | 1.8 |
| 23 | 9.71 664 | 21 | 9.78 533 | 29 | 9.21 467 | 9.93 131 | 7 | 37 | 6 | 2.1 |
| 24 | 9.71 685 | 20 | 9.78 562 | 28 | 9.21 438 | 9.93 123 | 8 | 36 | 7 | 2.4 |
| 25 | 9.71 705 | 20 | 9.78 590 | 28 | 9.21 410 | 9.93 115 | 8 | 35 | 8 | 2.8 |
| 26 | 9.71 726 | 21 | 9.78 618 | 29 | 9.21 382 | 9.93 108 | 7 | 34 | 9 | 3.2 |
| 27 | 9.71 747 | 21 | 9.78 647 | 28 | 9.21 353 | 9.93 100 | 8 | 33 | 10 | 3.5 |
| 28 | 9.71 767 | 20 | 9.78 675 | 29 | 9.21 325 | 9.93 092 | 8 | 32 | 20 | 7.0 |
| 29 | 9.71 788 | 21 | 9.78 704 | 28 | 9.21 296 | 9.93 084 | 8 | 31 | 30 | 10.5 |
| 30 | 9.71 809 | 20 | 9.78 732 | 28 | 9.21 268 | 9.93 077 | 7 | 30 | 40 | 14.0 |
| 31 | 9.71 829 | 21 | 9.78 760 | 29 | 9.21 240 | 9.93 069 | 8 | 29 | 50 | 17.5 |
| 32 | 9.71 850 | 20 | 9.78 789 | 28 | 9.21 211 | 9.93 061 | 8 | 28 | | |
| 33 | 9.71 870 | 21 | 9.78 817 | 28 | 9.21 183 | 9.93 053 | 8 | 27 | 8 | 7 |
| 34 | 9.71 891 | 20 | 9.78 845 | 29 | 9.21 155 | 9.93 046 | 7 | 26 | 1 | 0.1 |
| 35 | 9.71 911 | 21 | 9.78 874 | 28 | 9.21 126 | 9.93 038 | 8 | 25 | 2 | 0.3 |
| 36 | 9.71 932 | 20 | 9.78 902 | 28 | 9.21 098 | 9.93 030 | 8 | 24 | 3 | 0.4 |
| 37 | 9.71 952 | 21 | 9.78 930 | 29 | 9.21 070 | 9.93 022 | 8 | 23 | 4 | 0.5 |
| 38 | 9.71 973 | 21 | 9.78 959 | 28 | 9.21 041 | 9.93 014 | 8 | 22 | 5 | 0.7 |
| 39 | 9.71 994 | 20 | 9.78 987 | 28 | 9.21 013 | 9.93 007 | 7 | 21 | 6 | 0.8 |
| 40 | 9.72 014 | 20 | 9.79 015 | 28 | 9.20 985 | 9.92 999 | 8 | 20 | 7 | 0.9 |
| 41 | 9.72 034 | 21 | 9.79 043 | 29 | 9.20 957 | 9.92 991 | 8 | 19 | 8 | 1.0 |
| 42 | 9.72 055 | 20 | 9.79 072 | 28 | 9.20 928 | 9.92 983 | 8 | 18 | 9 | 1.2 |
| 43 | 9.72 075 | 20 | 9.79 100 | 28 | 9.20 900 | 9.92 976 | 7 | 17 | 10 | 1.3 |
| 44 | 9.72 096 | 20 | 9.79 128 | 28 | 9.20 872 | 9.92 968 | 8 | 16 | 20 | 2.7 |
| 45 | 9.72 116 | 21 | 9.79 156 | 29 | 9.20 844 | 9.92 960 | 8 | 15 | 30 | 4.0 |
| 46 | 9.72 137 | 20 | 9.79 185 | 28 | 9.20 815 | 9.92 952 | 8 | 14 | 40 | 5.3 |
| 47 | 9.72 157 | 20 | 9.79 213 | 28 | 9.20 787 | 9.92 944 | 8 | 13 | 50 | 6.7 |
| 48 | 9.72 177 | 21 | 9.79 241 | 28 | 9.20 759 | 9.92 936 | 8 | 12 | | |
| 49 | 9.72 198 | 20 | 9.79 269 | 28 | 9.20 731 | 9.92 929 | 7 | 11 | 8 | 8 |
| 50 | 9.72 218 | 20 | 9.79 297 | 29 | 9.20 703 | 9.92 921 | 8 | 10 | 30 | 29 |
| 51 | 9.72 238 | 21 | 9.79 326 | 28 | 9.20 674 | 9.92 913 | 8 | 9 | 28 | 28 |
| 52 | 9.72 259 | 20 | 9.79 354 | 28 | 9.20 646 | 9.92 905 | 8 | 8 | 1 | 1.9 |
| 53 | 9.72 279 | 20 | 9.79 382 | 28 | 9.20 618 | 9.92 897 | 8 | 7 | 2 | 5.6 |
| 54 | 9.72 299 | 21 | 9.79 410 | 28 | 9.20 590 | 9.92 889 | 8 | 6 | 3 | 9.4 |
| 55 | 9.72 320 | 20 | 9.79 438 | 28 | 9.20 562 | 9.92 881 | 8 | 5 | 4 | 13.1 |
| 56 | 9.72 340 | 20 | 9.79 466 | 29 | 9.20 534 | 9.92 874 | 7 | 4 | 5 | 16.9 |
| 57 | 9.72 360 | 21 | 9.79 495 | 28 | 9.20 505 | 9.92 866 | 8 | 3 | 6 | 20.6 |
| 58 | 9.72 381 | 20 | 9.79 523 | 28 | 9.20 477 | 9.92 858 | 8 | 2 | 5 | 24.4 |
| 59 | 9.72 401 | 20 | 9.79 551 | 28 | 9.20 449 | 9.92 850 | 8 | 1 | 6 | 28.1 |
| 60 | 9.72 421 | 20 | 9.79 579 | 28 | 9.20 421 | 9.92 842 | 8 | 0 | | |
| | L Cos | d | L Cot | d | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|---|----|------|
| 0 | 0.72 421 | 20 | 0.79 579 | 28 | 0.20 421 | 0.92 842 | 8 | 60 | |
| 1 | 0.72 441 | 20 | 0.79 607 | 28 | 0.20 393 | 0.92 834 | 8 | 59 | 29 |
| 2 | 0.72 461 | 21 | 0.79 635 | 28 | 0.20 365 | 0.92 826 | 8 | 58 | 28 |
| 3 | 0.72 482 | 20 | 0.79 663 | 28 | 0.20 337 | 0.92 818 | 8 | 57 | 27 |
| 4 | 0.72 502 | 20 | 0.79 691 | 28 | 0.20 309 | 0.92 810 | 7 | 56 | 0.4 |
| 5 | 0.72 522 | 20 | 0.79 719 | 28 | 0.20 281 | 0.92 803 | 8 | 55 | 0.9 |
| 6 | 0.72 542 | 20 | 0.79 747 | 29 | 0.20 253 | 0.92 795 | 8 | 54 | 1.4 |
| 7 | 0.72 562 | 20 | 0.79 776 | 28 | 0.20 224 | 0.92 787 | 8 | 53 | 1.9 |
| 8 | 0.72 582 | 20 | 0.79 804 | 28 | 0.20 196 | 0.92 779 | 8 | 52 | 2.4 |
| 9 | 0.72 602 | 20 | 0.79 832 | 28 | 0.20 168 | 0.92 771 | 8 | 51 | 2.9 |
| 10 | 0.72 622 | 21 | 0.79 860 | 28 | 0.20 140 | 0.92 763 | 8 | 50 | 3.4 |
| 11 | 0.72 643 | 20 | 0.79 888 | 28 | 0.20 112 | 0.92 755 | 8 | 49 | 3.9 |
| 12 | 0.72 663 | 20 | 0.79 916 | 28 | 0.20 084 | 0.92 747 | 8 | 48 | 4.4 |
| 13 | 0.72 683 | 20 | 0.79 944 | 28 | 0.20 056 | 0.92 739 | 8 | 47 | 4.9 |
| 14 | 0.72 703 | 20 | 0.79 972 | 28 | 0.20 028 | 0.92 731 | 8 | 46 | 5.4 |
| 15 | 0.72 723 | 20 | 0.80 000 | 28 | 0.20 000 | 0.92 723 | 8 | 45 | 5.9 |
| 16 | 0.72 743 | 20 | 0.80 028 | 28 | 0.19 972 | 0.92 715 | 8 | 44 | 6.4 |
| 17 | 0.72 763 | 20 | 0.80 056 | 28 | 0.19 944 | 0.92 707 | 8 | 43 | 6.9 |
| 18 | 0.72 783 | 20 | 0.80 084 | 28 | 0.19 916 | 0.92 699 | 8 | 42 | 7.4 |
| 19 | 0.72 803 | 20 | 0.80 112 | 28 | 0.19 888 | 0.92 691 | 8 | 41 | 7.9 |
| 20 | 0.72 823 | 20 | 0.80 140 | 28 | 0.19 860 | 0.92 683 | 8 | 40 | 8.4 |
| 21 | 0.72 843 | 20 | 0.80 168 | 27 | 0.19 832 | 0.92 675 | 8 | 39 | 8.9 |
| 22 | 0.72 863 | 20 | 0.80 195 | 28 | 0.19 805 | 0.92 667 | 8 | 38 | 9.4 |
| 23 | 0.72 883 | 19 | 0.80 223 | 28 | 0.19 777 | 0.92 659 | 8 | 37 | 9.9 |
| 24 | 0.72 902 | 20 | 0.80 251 | 28 | 0.19 749 | 0.92 651 | 8 | 36 | 10.4 |
| 25 | 0.72 922 | 20 | 0.80 279 | 28 | 0.19 721 | 0.92 643 | 8 | 35 | 10.9 |
| 26 | 0.72 942 | 20 | 0.80 307 | 28 | 0.19 693 | 0.92 635 | 8 | 34 | 11.4 |
| 27 | 0.72 962 | 20 | 0.80 335 | 28 | 0.19 665 | 0.92 627 | 8 | 33 | 11.9 |
| 28 | 0.72 982 | 20 | 0.80 363 | 28 | 0.19 637 | 0.92 619 | 8 | 32 | 12.4 |
| 29 | 0.73 002 | 20 | 0.80 391 | 28 | 0.19 609 | 0.92 611 | 8 | 31 | 12.9 |
| 30 | 0.73 022 | 19 | 0.80 419 | 28 | 0.19 581 | 0.92 603 | 8 | 30 | 13.4 |
| 31 | 0.73 041 | 20 | 0.80 447 | 27 | 0.19 553 | 0.92 595 | 8 | 29 | 13.9 |
| 32 | 0.73 061 | 20 | 0.80 474 | 28 | 0.19 526 | 0.92 587 | 8 | 28 | 14.4 |
| 33 | 0.73 081 | 20 | 0.80 502 | 28 | 0.19 498 | 0.92 579 | 8 | 27 | 14.9 |
| 34 | 0.73 101 | 20 | 0.80 530 | 28 | 0.19 470 | 0.92 571 | 8 | 26 | 15.4 |
| 35 | 0.73 121 | 19 | 0.80 558 | 28 | 0.19 442 | 0.92 563 | 8 | 25 | 15.9 |
| 36 | 0.73 140 | 20 | 0.80 586 | 28 | 0.19 414 | 0.92 555 | 9 | 24 | 16.4 |
| 37 | 0.73 160 | 20 | 0.80 614 | 28 | 0.19 386 | 0.92 546 | 8 | 23 | 16.9 |
| 38 | 0.73 180 | 20 | 0.80 642 | 27 | 0.19 358 | 0.92 538 | 8 | 22 | 17.4 |
| 39 | 0.73 200 | 19 | 0.80 669 | 28 | 0.19 331 | 0.92 530 | 8 | 21 | 17.9 |
| 40 | 0.73 219 | 20 | 0.80 697 | 28 | 0.19 303 | 0.92 522 | 8 | 20 | 18.4 |
| 41 | 0.73 239 | 20 | 0.80 725 | 28 | 0.19 275 | 0.92 514 | 8 | 19 | 18.9 |
| 42 | 0.73 259 | 19 | 0.80 753 | 28 | 0.19 247 | 0.92 506 | 8 | 18 | 19.4 |
| 43 | 0.73 278 | 20 | 0.80 781 | 27 | 0.19 219 | 0.92 498 | 8 | 17 | 19.9 |
| 44 | 0.73 298 | 20 | 0.80 808 | 28 | 0.19 192 | 0.92 490 | 8 | 16 | 20.4 |
| 45 | 0.73 318 | 19 | 0.80 836 | 28 | 0.19 164 | 0.92 482 | 9 | 15 | 20.9 |
| 46 | 0.73 337 | 20 | 0.80 864 | 28 | 0.19 136 | 0.92 473 | 8 | 14 | 21.4 |
| 47 | 0.73 357 | 20 | 0.80 892 | 28 | 0.19 108 | 0.92 465 | 8 | 13 | 21.9 |
| 48 | 0.73 377 | 19 | 0.80 919 | 27 | 0.19 081 | 0.92 457 | 8 | 12 | 22.4 |
| 49 | 0.73 396 | 20 | 0.80 947 | 28 | 0.19 053 | 0.92 449 | 8 | 11 | 22.9 |
| 50 | 0.73 416 | 19 | 0.80 975 | 28 | 0.19 025 | 0.92 441 | 8 | 10 | 23.4 |
| 51 | 0.73 435 | 20 | 0.81 003 | 27 | 0.18 997 | 0.92 433 | 8 | 9 | 23.9 |
| 52 | 0.73 455 | 19 | 0.81 030 | 28 | 0.18 970 | 0.92 425 | 9 | 8 | 24.4 |
| 53 | 0.73 474 | 20 | 0.81 058 | 28 | 0.18 942 | 0.92 416 | 8 | 7 | 24.9 |
| 54 | 0.73 494 | 19 | 0.81 086 | 27 | 0.18 914 | 0.92 408 | 8 | 6 | 25.4 |
| 55 | 0.73 513 | 20 | 0.81 113 | 28 | 0.18 887 | 0.92 400 | 8 | 5 | 25.9 |
| 56 | 0.73 533 | 19 | 0.81 141 | 28 | 0.18 859 | 0.92 392 | 8 | 4 | 26.4 |
| 57 | 0.73 552 | 20 | 0.81 169 | 27 | 0.18 831 | 0.92 384 | 8 | 3 | 26.9 |
| 58 | 0.73 572 | 19 | 0.81 196 | 28 | 0.18 804 | 0.92 376 | 9 | 2 | 27.4 |
| 59 | 0.73 591 | 20 | 0.81 224 | 28 | 0.18 776 | 0.92 367 | 8 | 1 | 27.9 |
| 60 | 0.73 611 | | 0.81 252 | | 0.18 748 | 0.92 359 | | 0 | 28.4 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P P |

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|---|----|------|------|
| 0 | 9.73 611 | | 9.81 252 | | 0.18 748 | 9.92 359 | 8 | 60 | | |
| 1 | 9.73 630 | 19 | 9.81 279 | 27 | 0.18 721 | 9.92 351 | 8 | 59 | 28 | 27 |
| 2 | 9.73 650 | 20 | 9.81 307 | 28 | 0.18 693 | 9.92 343 | 8 | 58 | 1 | 0.5 |
| 3 | 9.73 669 | 19 | 9.81 335 | 28 | 0.18 665 | 9.92 335 | 8 | 57 | 2 | 0.9 |
| 4 | 9.73 689 | 20 | 9.81 362 | 27 | 0.18 638 | 9.92 326 | 8 | 56 | 3 | 1.4 |
| 5 | 9.73 708 | 19 | 9.81 390 | 28 | 0.18 610 | 9.92 318 | 8 | 55 | 4 | 1.9 |
| 6 | 9.73 727 | 19 | 9.81 418 | 28 | 0.18 582 | 9.92 310 | 8 | 54 | 5 | 2.3 |
| 7 | 9.73 747 | 20 | 9.81 445 | 27 | 0.18 555 | 9.92 302 | 8 | 53 | 6 | 2.8 |
| 8 | 9.73 766 | 19 | 9.81 473 | 28 | 0.18 527 | 9.92 293 | 8 | 52 | 7 | 3.3 |
| 9 | 9.73 785 | 19 | 9.81 500 | 27 | 0.18 500 | 9.92 285 | 8 | 51 | 8 | 3.7 |
| 10 | 9.73 805 | 20 | 9.81 528 | 28 | 0.18 472 | 9.92 277 | 8 | 50 | 9 | 4.2 |
| 11 | 9.73 824 | 19 | 9.81 556 | 28 | 0.18 444 | 9.92 269 | 8 | 49 | 10 | 4.7 |
| 12 | 9.73 843 | 19 | 9.81 583 | 27 | 0.18 417 | 9.92 260 | 8 | 48 | 20 | 9.3 |
| 13 | 9.73 863 | 20 | 9.81 611 | 28 | 0.18 389 | 9.92 252 | 8 | 47 | 30 | 14.0 |
| 14 | 9.73 882 | 19 | 9.81 638 | 27 | 0.18 362 | 9.92 244 | 8 | 46 | 40 | 18.7 |
| 15 | 9.73 901 | 19 | 9.81 666 | 28 | 0.18 334 | 9.92 235 | 8 | 45 | 50 | 23.3 |
| 16 | 9.73 921 | 20 | 9.81 693 | 27 | 0.18 307 | 9.92 227 | 8 | 44 | | |
| 17 | 9.73 940 | 19 | 9.81 721 | 28 | 0.18 279 | 9.92 219 | 8 | 43 | 20 | 19 |
| 18 | 9.73 959 | 19 | 9.81 748 | 27 | 0.18 252 | 9.92 211 | 8 | 42 | 1 | 18 |
| 19 | 9.73 978 | 19 | 9.81 776 | 28 | 0.18 224 | 9.92 202 | 8 | 41 | 0.3 | 0.3 |
| 20 | 9.73 997 | 20 | 9.81 803 | 27 | 0.18 197 | 9.92 194 | 8 | 40 | 0.7 | 0.6 |
| 21 | 9.74 017 | 19 | 9.81 831 | 28 | 0.18 169 | 9.92 186 | 8 | 39 | 1.0 | 0.9 |
| 22 | 9.74 036 | 19 | 9.81 858 | 27 | 0.18 142 | 9.92 177 | 8 | 38 | 1.3 | 1.2 |
| 23 | 9.74 055 | 20 | 9.81 886 | 28 | 0.18 114 | 9.92 169 | 8 | 37 | 1.6 | 1.5 |
| 24 | 9.74 074 | 19 | 9.81 913 | 27 | 0.18 087 | 9.92 161 | 8 | 36 | 2.0 | 1.9 |
| 25 | 9.74 093 | 19 | 9.81 941 | 28 | 0.18 059 | 9.92 152 | 8 | 35 | 2.3 | 2.2 |
| 26 | 9.74 113 | 20 | 9.81 968 | 27 | 0.18 032 | 9.92 144 | 8 | 34 | 2.7 | 2.5 |
| 27 | 9.74 132 | 19 | 9.81 996 | 28 | 0.18 004 | 9.92 136 | 8 | 33 | 3.0 | 2.8 |
| 28 | 9.74 151 | 19 | 9.82 023 | 27 | 0.17 977 | 9.92 127 | 8 | 32 | 3.3 | 3.0 |
| 29 | 9.74 170 | 19 | 9.82 051 | 28 | 0.17 949 | 9.92 119 | 8 | 31 | 6.7 | 6.3 |
| 30 | 9.74 189 | 20 | 9.82 078 | 27 | 0.17 922 | 9.92 111 | 8 | 30 | 10.0 | 9.5 |
| 31 | 9.74 208 | 19 | 9.82 106 | 28 | 0.17 894 | 9.92 102 | 8 | 29 | 13.3 | 12.7 |
| 32 | 9.74 227 | 19 | 9.82 133 | 27 | 0.17 867 | 9.92 094 | 8 | 28 | 16.7 | 15.8 |
| 33 | 9.74 246 | 19 | 9.82 161 | 28 | 0.17 839 | 9.92 086 | 8 | 27 | | |
| 34 | 9.74 265 | 20 | 9.82 188 | 27 | 0.17 812 | 9.92 077 | 8 | 26 | 9 | 8 |
| 35 | 9.74 284 | 19 | 9.82 215 | 28 | 0.17 785 | 9.92 069 | 8 | 25 | 1 | 0.2 |
| 36 | 9.74 303 | 19 | 9.82 243 | 27 | 0.17 757 | 9.92 060 | 8 | 24 | 2 | 0.3 |
| 37 | 9.74 322 | 20 | 9.82 270 | 28 | 0.17 730 | 9.92 052 | 8 | 23 | 3 | 0.4 |
| 38 | 9.74 341 | 19 | 9.82 298 | 27 | 0.17 702 | 9.92 044 | 8 | 22 | 4 | 0.6 |
| 39 | 9.74 360 | 19 | 9.82 325 | 28 | 0.17 675 | 9.92 035 | 8 | 21 | 5 | 0.8 |
| 40 | 9.74 379 | 20 | 9.82 352 | 27 | 0.17 648 | 9.92 027 | 8 | 20 | 6 | 0.9 |
| 41 | 9.74 398 | 19 | 9.82 380 | 28 | 0.17 620 | 9.92 018 | 8 | 19 | 7 | 1.0 |
| 42 | 9.74 417 | 19 | 9.82 407 | 27 | 0.17 593 | 9.92 010 | 8 | 18 | 8 | 1.2 |
| 43 | 9.74 436 | 19 | 9.82 435 | 28 | 0.17 565 | 9.92 002 | 8 | 17 | 9 | 1.4 |
| 44 | 9.74 455 | 20 | 9.82 462 | 27 | 0.17 538 | 9.91 993 | 8 | 16 | 10 | 1.5 |
| 45 | 9.74 474 | 19 | 9.82 489 | 28 | 0.17 511 | 9.91 985 | 8 | 15 | 20 | 3.0 |
| 46 | 9.74 493 | 19 | 9.82 517 | 27 | 0.17 483 | 9.91 976 | 8 | 14 | 30 | 4.5 |
| 47 | 9.74 512 | 20 | 9.82 544 | 28 | 0.17 456 | 9.91 968 | 8 | 13 | 40 | 6.0 |
| 48 | 9.74 531 | 19 | 9.82 571 | 27 | 0.17 429 | 9.91 959 | 8 | 12 | 50 | 7.5 |
| 49 | 9.74 549 | 19 | 9.82 599 | 28 | 0.17 401 | 9.91 951 | 8 | 11 | | |
| 50 | 9.74 568 | 20 | 9.82 626 | 27 | 0.17 374 | 9.91 942 | 8 | 10 | 9 | 8 |
| 51 | 9.74 587 | 19 | 9.82 653 | 28 | 0.17 347 | 9.91 934 | 8 | 9 | 0 | 1.6 |
| 52 | 9.74 606 | 19 | 9.82 681 | 27 | 0.17 319 | 9.91 925 | 8 | 8 | 1 | 4.7 |
| 53 | 9.74 625 | 20 | 9.82 708 | 28 | 0.17 292 | 9.91 917 | 8 | 7 | 2 | 4.7 |
| 54 | 9.74 644 | 19 | 9.82 735 | 27 | 0.17 265 | 9.91 908 | 8 | 6 | 3 | 7.5 |
| 55 | 9.74 662 | 19 | 9.82 762 | 28 | 0.17 238 | 9.91 900 | 8 | 5 | 4 | 7.5 |
| 56 | 9.74 681 | 20 | 9.82 790 | 27 | 0.17 210 | 9.91 891 | 8 | 4 | 5 | 10.9 |
| 57 | 9.74 700 | 19 | 9.82 817 | 28 | 0.17 183 | 9.91 883 | 8 | 3 | 6 | 10.5 |
| 58 | 9.74 719 | 19 | 9.82 844 | 27 | 0.17 156 | 9.91 874 | 8 | 2 | 7 | 13.5 |
| 59 | 9.74 737 | 20 | 9.82 871 | 28 | 0.17 129 | 9.91 866 | 8 | 1 | 8 | 16.5 |
| 60 | 9.74 756 | 19 | 9.82 899 | 27 | 0.17 101 | 9.91 857 | 8 | 0 | 9 | 21.9 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|---|----|----|------|
| 0 | 9.74 756 | 19 | 9.82 899 | 27 | 0.17 101 | 9.91 857 | 8 | 60 | | |
| 1 | 9.74 775 | 19 | 9.82 926 | 27 | 0.17 074 | 9.91 849 | 9 | 59 | 28 | 27 |
| 2 | 9.74 794 | 18 | 9.82 953 | 27 | 0.17 047 | 9.91 840 | 8 | 58 | 1 | 0.5 |
| 3 | 9.74 812 | 18 | 9.82 980 | 28 | 0.17 020 | 9.91 832 | 8 | 57 | 2 | 0.9 |
| 4 | 9.74 831 | 19 | 9.83 008 | 27 | 0.16 992 | 9.91 823 | 9 | 56 | 3 | 1.4 |
| 5 | 9.74 850 | 18 | 9.83 035 | 27 | 0.16 965 | 9.91 815 | 8 | 55 | 4 | 1.9 |
| 6 | 9.74 868 | 18 | 9.83 062 | 27 | 0.16 938 | 9.91 806 | 9 | 54 | 5 | 2.3 |
| 7 | 9.74 887 | 19 | 9.83 089 | 28 | 0.16 911 | 9.91 798 | 8 | 53 | 6 | 2.8 |
| 8 | 9.74 906 | 18 | 9.83 117 | 27 | 0.16 883 | 9.91 789 | 9 | 52 | 7 | 3.3 |
| 9 | 9.74 924 | 19 | 9.83 144 | 27 | 0.16 856 | 9.91 781 | 8 | 51 | 8 | 3.7 |
| 10 | 9.74 943 | 18 | 9.83 171 | 27 | 0.16 829 | 9.91 772 | 9 | 50 | 9 | 4.2 |
| 11 | 9.74 961 | 19 | 9.83 198 | 27 | 0.16 802 | 9.91 763 | 8 | 49 | 10 | 4.7 |
| 12 | 9.74 980 | 19 | 9.83 225 | 27 | 0.16 775 | 9.91 755 | 9 | 48 | 20 | 9.3 |
| 13 | 9.74 999 | 18 | 9.83 252 | 28 | 0.16 748 | 9.91 746 | 8 | 47 | 30 | 14.0 |
| 14 | 9.75 017 | 19 | 9.83 280 | 27 | 0.16 720 | 9.91 738 | 9 | 46 | 40 | 18.7 |
| 15 | 9.75 036 | 18 | 9.83 307 | 27 | 0.16 693 | 9.91 729 | 8 | 45 | 50 | 23.3 |
| 16 | 9.75 054 | 19 | 9.83 334 | 27 | 0.16 666 | 9.91 720 | 9 | 44 | | |
| 17 | 9.75 073 | 18 | 9.83 361 | 27 | 0.16 639 | 9.91 712 | 8 | 43 | 19 | 18 |
| 18 | 9.75 091 | 19 | 9.83 388 | 27 | 0.16 612 | 9.91 703 | 9 | 42 | 1 | 0.3 |
| 19 | 9.75 110 | 18 | 9.83 415 | 27 | 0.16 585 | 9.91 695 | 8 | 41 | 2 | 0.6 |
| 20 | 9.75 128 | 19 | 9.83 442 | 28 | 0.16 558 | 9.91 686 | 9 | 40 | 3 | 1.0 |
| 21 | 9.75 147 | 18 | 9.83 470 | 27 | 0.16 530 | 9.91 677 | 8 | 39 | 4 | 1.3 |
| 22 | 9.75 165 | 19 | 9.83 497 | 27 | 0.16 503 | 9.91 669 | 9 | 38 | 5 | 1.6 |
| 23 | 9.75 184 | 18 | 9.83 524 | 27 | 0.16 476 | 9.91 660 | 8 | 37 | 6 | 1.9 |
| 24 | 9.75 202 | 19 | 9.83 551 | 27 | 0.16 449 | 9.91 651 | 9 | 36 | 7 | 2.2 |
| 25 | 9.75 221 | 18 | 9.83 578 | 27 | 0.16 422 | 9.91 643 | 8 | 35 | 8 | 2.5 |
| 26 | 9.75 239 | 19 | 9.83 605 | 27 | 0.16 395 | 9.91 634 | 9 | 34 | 9 | 2.8 |
| 27 | 9.75 258 | 18 | 9.83 632 | 27 | 0.16 368 | 9.91 625 | 8 | 33 | 10 | 3.2 |
| 28 | 9.75 276 | 19 | 9.83 659 | 27 | 0.16 341 | 9.91 617 | 9 | 32 | 20 | 6.3 |
| 29 | 9.75 294 | 18 | 9.83 686 | 27 | 0.16 314 | 9.91 608 | 8 | 31 | 30 | 9.5 |
| 30 | 9.75 313 | 19 | 9.83 713 | 27 | 0.16 287 | 9.91 599 | 9 | 30 | 40 | 12.7 |
| 31 | 9.75 331 | 18 | 9.83 740 | 28 | 0.16 260 | 9.91 591 | 8 | 29 | 50 | 15.8 |
| 32 | 9.75 350 | 19 | 9.83 768 | 27 | 0.16 232 | 9.91 582 | 9 | 28 | | |
| 33 | 9.75 368 | 18 | 9.83 795 | 27 | 0.16 205 | 9.91 573 | 8 | 27 | 9 | 8 |
| 34 | 9.75 386 | 19 | 9.83 822 | 27 | 0.16 178 | 9.91 565 | 9 | 26 | 1 | 0.2 |
| 35 | 9.75 405 | 18 | 9.83 849 | 27 | 0.16 151 | 9.91 556 | 8 | 25 | 2 | 0.3 |
| 36 | 9.75 423 | 19 | 9.83 876 | 27 | 0.16 124 | 9.91 547 | 9 | 24 | 3 | 0.4 |
| 37 | 9.75 441 | 18 | 9.83 903 | 27 | 0.16 097 | 9.91 538 | 8 | 23 | 4 | 0.6 |
| 38 | 9.75 459 | 19 | 9.83 930 | 27 | 0.16 070 | 9.91 530 | 9 | 22 | 5 | 0.8 |
| 39 | 9.75 478 | 18 | 9.83 957 | 27 | 0.16 043 | 9.91 521 | 8 | 21 | 6 | 0.9 |
| 40 | 9.75 496 | 19 | 9.83 984 | 27 | 0.16 016 | 9.91 512 | 9 | 20 | 7 | 1.0 |
| 41 | 9.75 514 | 18 | 9.84 011 | 27 | 0.15 989 | 9.91 504 | 8 | 19 | 8 | 1.2 |
| 42 | 9.75 533 | 19 | 9.84 038 | 27 | 0.15 962 | 9.91 495 | 9 | 18 | 9 | 1.4 |
| 43 | 9.75 551 | 18 | 9.84 065 | 27 | 0.15 935 | 9.91 486 | 8 | 17 | 10 | 1.5 |
| 44 | 9.75 569 | 19 | 9.84 092 | 27 | 0.15 908 | 9.91 477 | 9 | 16 | 20 | 3.0 |
| 45 | 9.75 587 | 18 | 9.84 119 | 27 | 0.15 881 | 9.91 469 | 8 | 15 | 30 | 4.5 |
| 46 | 9.75 605 | 19 | 9.84 146 | 27 | 0.15 854 | 9.91 460 | 9 | 14 | 40 | 6.0 |
| 47 | 9.75 624 | 18 | 9.84 173 | 27 | 0.15 827 | 9.91 451 | 8 | 13 | 50 | 7.5 |
| 48 | 9.75 642 | 19 | 9.84 200 | 27 | 0.15 800 | 9.91 442 | 9 | 12 | | |
| 49 | 9.75 660 | 18 | 9.84 227 | 27 | 0.15 773 | 9.91 433 | 8 | 11 | 9 | 8 |
| 50 | 9.75 678 | 19 | 9.84 254 | 26 | 0.15 746 | 9.91 425 | 9 | 10 | 28 | 28 |
| 51 | 9.75 696 | 18 | 9.84 280 | 27 | 0.15 720 | 9.91 416 | 8 | 9 | 1 | 1.6 |
| 52 | 9.75 714 | 19 | 9.84 307 | 27 | 0.15 693 | 9.91 407 | 9 | 8 | 2 | 4.7 |
| 53 | 9.75 733 | 18 | 9.84 334 | 27 | 0.15 666 | 9.91 398 | 8 | 7 | 3 | 7.8 |
| 54 | 9.75 751 | 19 | 9.84 361 | 27 | 0.15 639 | 9.91 389 | 9 | 6 | 4 | 10.0 |
| 55 | 9.75 769 | 18 | 9.84 388 | 27 | 0.15 612 | 9.91 381 | 8 | 5 | 5 | 14.0 |
| 56 | 9.75 787 | 19 | 9.84 415 | 27 | 0.15 585 | 9.91 372 | 9 | 4 | 6 | 17.1 |
| 57 | 9.75 805 | 18 | 9.84 442 | 27 | 0.15 558 | 9.91 363 | 8 | 3 | 7 | 20.2 |
| 58 | 9.75 823 | 19 | 9.84 469 | 27 | 0.15 531 | 9.91 354 | 9 | 2 | 8 | 23.3 |
| 59 | 9.75 841 | 18 | 9.84 496 | 27 | 0.15 504 | 9.91 345 | 8 | 1 | 9 | 26.4 |
| 60 | 9.75 859 | 19 | 9.84 523 | 27 | 0.15 477 | 9.91 336 | 9 | 0 | | |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P | P |

35°

*125° 215° *305°

| ' | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|----|----------|----------|----|----|----|------|
| 0 | 9.75 859 | 18 | 9.84 523 | 27 | 0.15 477 | 9.91 336 | 8 | 60 | | |
| 1 | 9.75 877 | 18 | 9.84 550 | 26 | 0.15 450 | 9.91 328 | 9 | 59 | 27 | 26 |
| 2 | 9.75 895 | 18 | 9.84 576 | 26 | 0.15 424 | 9.91 319 | 9 | 58 | 1 | 0.4 |
| 3 | 9.75 913 | 18 | 9.84 603 | 27 | 0.15 397 | 9.91 310 | 9 | 57 | 2 | 0.9 |
| 4 | 9.75 931 | 18 | 9.84 630 | 27 | 0.15 370 | 9.91 301 | 9 | 56 | 3 | 1.4 |
| 5 | 9.75 949 | 18 | 9.84 657 | 27 | 0.15 343 | 9.91 292 | 9 | 55 | 4 | 1.8 |
| 6 | 9.75 967 | 18 | 9.84 684 | 27 | 0.15 316 | 9.91 283 | 9 | 54 | 5 | 2.2 |
| 7 | 9.75 985 | 18 | 9.84 711 | 27 | 0.15 289 | 9.91 274 | 8 | 53 | 6 | 2.7 |
| 8 | 9.76 003 | 18 | 9.84 738 | 26 | 0.15 262 | 9.91 266 | 9 | 52 | 7 | 3.2 |
| 9 | 9.76 021 | 18 | 9.84 764 | 27 | 0.15 236 | 9.91 257 | 9 | 51 | 8 | 3.6 |
| 10 | 9.76 039 | 18 | 9.84 791 | 27 | 0.15 209 | 9.91 248 | 9 | 50 | 9 | 4.0 |
| 11 | 9.76 057 | 18 | 9.84 818 | 27 | 0.15 182 | 9.91 239 | 9 | 49 | 10 | 4.5 |
| 12 | 9.76 075 | 18 | 9.84 845 | 27 | 0.15 155 | 9.91 230 | 9 | 48 | 20 | 9.0 |
| 13 | 9.76 093 | 18 | 9.84 872 | 27 | 0.15 128 | 9.91 221 | 9 | 47 | 30 | 13.5 |
| 14 | 9.76 111 | 18 | 9.84 899 | 26 | 0.15 101 | 9.91 212 | 9 | 46 | 40 | 18.0 |
| 15 | 9.76 129 | 17 | 9.84 925 | 27 | 0.15 075 | 9.91 203 | 9 | 45 | 50 | 22.5 |
| 16 | 9.76 146 | 18 | 9.84 952 | 27 | 0.15 048 | 9.91 194 | 9 | 44 | | 21.7 |
| 17 | 9.76 164 | 18 | 9.84 979 | 27 | 0.15 021 | 9.91 185 | 9 | 43 | 17 | 10 |
| 18 | 9.76 182 | 18 | 9.85 006 | 27 | 0.14 994 | 9.91 176 | 9 | 42 | 1 | 0.3 |
| 19 | 9.76 200 | 18 | 9.85 033 | 26 | 0.14 967 | 9.91 167 | 9 | 41 | 2 | 0.6 |
| 20 | 9.76 218 | 18 | 9.85 059 | 27 | 0.14 941 | 9.91 158 | 9 | 40 | 3 | 0.8 |
| 21 | 9.76 236 | 17 | 9.85 086 | 27 | 0.14 914 | 9.91 149 | 8 | 39 | 4 | 1.1 |
| 22 | 9.76 253 | 18 | 9.85 113 | 27 | 0.14 887 | 9.91 141 | 9 | 38 | 5 | 1.4 |
| 23 | 9.76 271 | 18 | 9.85 140 | 26 | 0.14 860 | 9.91 132 | 9 | 37 | 6 | 1.7 |
| 24 | 9.76 289 | 18 | 9.85 166 | 27 | 0.14 834 | 9.91 123 | 9 | 36 | 7 | 2.0 |
| 25 | 9.76 307 | 17 | 9.85 193 | 27 | 0.14 807 | 9.91 114 | 9 | 35 | 8 | 2.3 |
| 26 | 9.76 324 | 18 | 9.85 220 | 27 | 0.14 780 | 9.91 105 | 9 | 34 | 9 | 2.6 |
| 27 | 9.76 342 | 18 | 9.85 247 | 26 | 0.14 753 | 9.91 096 | 9 | 33 | 10 | 2.8 |
| 28 | 9.76 360 | 18 | 9.85 273 | 27 | 0.14 727 | 9.91 087 | 9 | 32 | 20 | 5.7 |
| 29 | 9.76 378 | 17 | 9.85 300 | 27 | 0.14 700 | 9.91 078 | 9 | 31 | 30 | 8.5 |
| 30 | 9.76 395 | 18 | 9.85 327 | 27 | 0.14 673 | 9.91 069 | 9 | 30 | 40 | 11.3 |
| 31 | 9.76 413 | 18 | 9.85 354 | 26 | 0.14 646 | 9.91 060 | 9 | 29 | 50 | 14.2 |
| 32 | 9.76 431 | 17 | 9.85 380 | 27 | 0.14 620 | 9.91 051 | 9 | 28 | | 8.3 |
| 33 | 9.76 448 | 18 | 9.85 407 | 27 | 0.14 593 | 9.91 042 | 9 | 27 | | 7.5 |
| 34 | 9.76 466 | 18 | 9.85 434 | 26 | 0.14 566 | 9.91 033 | 10 | 26 | 10 | 26 |
| 35 | 9.76 484 | 17 | 9.85 460 | 27 | 0.14 540 | 9.91 023 | 9 | 25 | 27 | 1.4 |
| 36 | 9.76 501 | 18 | 9.85 487 | 27 | 0.14 513 | 9.91 014 | 9 | 24 | 0 | 1.1 |
| 37 | 9.76 519 | 18 | 9.85 514 | 26 | 0.14 486 | 9.91 005 | 9 | 23 | 1 | 4.1 |
| 38 | 9.76 537 | 17 | 9.85 540 | 27 | 0.14 460 | 9.90 996 | 9 | 22 | 2 | 6.8 |
| 39 | 9.76 554 | 18 | 9.85 567 | 27 | 0.14 433 | 9.90 987 | 9 | 21 | 3 | 9.4 |
| 40 | 9.76 572 | 18 | 9.85 594 | 26 | 0.14 406 | 9.90 978 | 9 | 20 | 4 | 12.2 |
| 41 | 9.76 590 | 17 | 9.85 620 | 27 | 0.14 380 | 9.90 969 | 9 | 19 | 5 | 14.8 |
| 42 | 9.76 607 | 18 | 9.85 647 | 27 | 0.14 353 | 9.90 960 | 9 | 18 | 6 | 17.6 |
| 43 | 9.76 625 | 17 | 9.85 674 | 26 | 0.14 326 | 9.90 951 | 9 | 17 | 7 | 20.2 |
| 44 | 9.76 642 | 18 | 9.85 700 | 27 | 0.14 300 | 9.90 942 | 9 | 16 | 8 | 22.9 |
| 45 | 9.76 660 | 17 | 9.85 727 | 27 | 0.14 273 | 9.90 933 | 9 | 15 | 9 | 25.6 |
| 46 | 9.76 677 | 18 | 9.85 754 | 26 | 0.14 246 | 9.90 924 | 9 | 14 | 10 | 24.7 |
| 47 | 9.76 695 | 17 | 9.85 780 | 27 | 0.14 220 | 9.90 915 | 9 | 13 | | |
| 48 | 9.76 712 | 18 | 9.85 807 | 27 | 0.14 193 | 9.90 906 | 10 | 12 | 9 | 9 |
| 49 | 9.76 730 | 17 | 9.85 834 | 26 | 0.14 166 | 9.90 896 | 9 | 11 | 27 | 1.4 |
| 50 | 9.76 747 | 18 | 9.85 860 | 27 | 0.14 140 | 9.90 887 | 9 | 10 | 0 | 4.5 |
| 51 | 9.76 765 | 17 | 9.85 887 | 26 | 0.14 113 | 9.90 878 | 9 | 9 | 1 | 7.5 |
| 52 | 9.76 782 | 18 | 9.85 913 | 27 | 0.14 087 | 9.90 869 | 9 | 8 | 2 | 10.5 |
| 53 | 9.76 800 | 17 | 9.85 940 | 27 | 0.14 060 | 9.90 860 | 9 | 7 | 3 | 13.5 |
| 54 | 9.76 817 | 18 | 9.85 967 | 26 | 0.14 033 | 9.90 851 | 9 | 6 | 4 | 16.5 |
| 55 | 9.76 835 | 17 | 9.85 993 | 27 | 0.14 007 | 9.90 842 | 10 | 5 | 5 | 19.5 |
| 56 | 9.76 852 | 18 | 9.86 020 | 26 | 0.13 980 | 9.90 832 | 9 | 4 | 6 | 22.5 |
| 57 | 9.76 870 | 17 | 9.86 046 | 27 | 0.13 954 | 9.90 823 | 9 | 3 | 7 | 25.6 |
| 58 | 9.76 887 | 17 | 9.86 073 | 27 | 0.13 927 | 9.90 814 | 9 | 2 | 8 | |
| 59 | 9.76 904 | 18 | 9.86 100 | 26 | 0.13 900 | 9.90 805 | 9 | 1 | 9 | |
| 60 | 9.76 922 | | 9.86 126 | | 0.13 874 | 9.90 796 | 9 | 0 | | |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P | P |

*144° 234° *324°

54°

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|----|----|----|------|
| 0 | 9.76 922 | | 9.86 126 | | 0.13 874 | 9.90 796 | | 60 | | |
| 1 | 9.76 939 | 17 | 9.86 153 | 27 | 0.13 847 | 9.90 787 | 9 | 59 | 27 | 26 |
| 2 | 9.76 957 | 18 | 9.86 179 | 26 | 0.13 821 | 9.90 777 | 10 | 58 | 1 | 0.4 |
| 3 | 9.76 974 | 17 | 9.86 206 | 27 | 0.13 794 | 9.90 768 | 9 | 57 | 2 | 0.9 |
| 4 | 9.76 991 | 18 | 9.86 232 | 27 | 0.13 768 | 9.90 759 | 9 | 56 | 3 | 1.4 |
| 5 | 9.77 009 | 17 | 9.86 259 | 26 | 0.13 741 | 9.90 750 | 9 | 55 | 4 | 1.8 |
| 6 | 9.77 026 | 17 | 9.86 285 | 27 | 0.13 715 | 9.90 741 | 9 | 54 | 5 | 2.2 |
| 7 | 9.77 043 | 18 | 9.86 312 | 26 | 0.13 688 | 9.90 731 | 10 | 53 | 6 | 2.7 |
| 8 | 9.77 061 | 17 | 9.86 338 | 27 | 0.13 662 | 9.90 722 | 9 | 52 | 7 | 3.2 |
| 9 | 9.77 078 | 17 | 9.86 365 | 27 | 0.13 635 | 9.90 713 | 9 | 51 | 8 | 3.6 |
| 10 | 9.77 095 | 17 | 9.86 392 | 26 | 0.13 608 | 9.90 704 | 9 | 50 | 9 | 4.0 |
| 11 | 9.77 112 | 17 | 9.86 418 | 27 | 0.13 582 | 9.90 694 | 10 | 49 | 10 | 4.5 |
| 12 | 9.77 130 | 18 | 9.86 445 | 26 | 0.13 555 | 9.90 685 | 9 | 48 | 20 | 9.0 |
| 13 | 9.77 147 | 17 | 9.86 471 | 27 | 0.13 529 | 9.90 676 | 9 | 47 | 30 | 13.5 |
| 14 | 9.77 164 | 17 | 9.86 498 | 26 | 0.13 502 | 9.90 667 | 9 | 46 | 40 | 18.0 |
| 15 | 9.77 181 | 18 | 9.86 524 | 27 | 0.13 476 | 9.90 657 | 10 | 45 | 50 | 22.5 |
| 16 | 9.77 199 | 17 | 9.86 551 | 26 | 0.13 449 | 9.90 648 | 9 | 44 | 18 | 17 |
| 17 | 9.77 216 | 17 | 9.86 577 | 27 | 0.13 423 | 9.90 639 | 9 | 43 | 17 | 16 |
| 18 | 9.77 233 | 17 | 9.86 603 | 26 | 0.13 397 | 9.90 630 | 9 | 42 | 1 | 0.3 |
| 19 | 9.77 250 | 18 | 9.86 630 | 27 | 0.13 370 | 9.90 620 | 10 | 41 | 2 | 0.6 |
| 20 | 9.77 268 | 17 | 9.86 656 | 26 | 0.13 344 | 9.90 611 | 9 | 40 | 3 | 0.9 |
| 21 | 9.77 285 | 17 | 9.86 683 | 27 | 0.13 317 | 9.90 602 | 9 | 39 | 4 | 1.2 |
| 22 | 9.77 302 | 17 | 9.86 709 | 26 | 0.13 291 | 9.90 592 | 10 | 38 | 5 | 1.5 |
| 23 | 9.77 319 | 17 | 9.86 736 | 27 | 0.13 264 | 9.90 583 | 9 | 37 | 6 | 1.8 |
| 24 | 9.77 336 | 17 | 9.86 762 | 26 | 0.13 238 | 9.90 574 | 9 | 36 | 7 | 2.1 |
| 25 | 9.77 353 | 17 | 9.86 789 | 27 | 0.13 211 | 9.90 565 | 9 | 35 | 8 | 2.4 |
| 26 | 9.77 370 | 17 | 9.86 815 | 26 | 0.13 185 | 9.90 555 | 10 | 34 | 9 | 2.7 |
| 27 | 9.77 387 | 18 | 9.86 842 | 27 | 0.13 158 | 9.90 546 | 9 | 33 | 10 | 3.0 |
| 28 | 9.77 405 | 17 | 9.86 868 | 26 | 0.13 132 | 9.90 537 | 9 | 32 | 20 | 6.0 |
| 29 | 9.77 422 | 17 | 9.86 894 | 27 | 0.13 106 | 9.90 527 | 10 | 31 | 30 | 9.0 |
| 30 | 9.77 439 | 17 | 9.86 921 | 26 | 0.13 079 | 9.90 518 | 9 | 30 | 40 | 12.0 |
| 31 | 9.77 456 | 17 | 9.86 947 | 27 | 0.13 053 | 9.90 509 | 9 | 29 | 50 | 15.0 |
| 32 | 9.77 473 | 17 | 9.86 974 | 26 | 0.13 026 | 9.90 499 | 10 | 28 | 10 | 9 |
| 33 | 9.77 490 | 17 | 9.87 000 | 27 | 0.13 000 | 9.90 490 | 9 | 27 | 1 | 0.2 |
| 34 | 9.77 507 | 17 | 9.87 027 | 26 | 0.12 973 | 9.90 480 | 10 | 26 | 2 | 0.3 |
| 35 | 9.77 524 | 17 | 9.87 053 | 27 | 0.12 947 | 9.90 471 | 9 | 25 | 3 | 0.5 |
| 36 | 9.77 541 | 17 | 9.87 079 | 26 | 0.12 921 | 9.90 462 | 9 | 24 | 4 | 0.7 |
| 37 | 9.77 558 | 17 | 9.87 106 | 27 | 0.12 894 | 9.90 452 | 10 | 23 | 5 | 0.8 |
| 38 | 9.77 575 | 17 | 9.87 132 | 26 | 0.12 868 | 9.90 443 | 9 | 22 | 6 | 1.0 |
| 39 | 9.77 592 | 17 | 9.87 158 | 27 | 0.12 842 | 9.90 434 | 9 | 21 | 7 | 1.2 |
| 40 | 9.77 609 | 17 | 9.87 185 | 26 | 0.12 815 | 9.90 424 | 10 | 20 | 8 | 1.3 |
| 41 | 9.77 626 | 17 | 9.87 211 | 27 | 0.12 789 | 9.90 415 | 9 | 19 | 9 | 1.5 |
| 42 | 9.77 643 | 17 | 9.87 238 | 26 | 0.12 762 | 9.90 405 | 10 | 18 | 10 | 1.7 |
| 43 | 9.77 660 | 17 | 9.87 264 | 27 | 0.12 736 | 9.90 396 | 9 | 17 | 20 | 3.3 |
| 44 | 9.77 677 | 17 | 9.87 290 | 26 | 0.12 710 | 9.90 386 | 10 | 16 | 30 | 5.0 |
| 45 | 9.77 694 | 17 | 9.87 317 | 27 | 0.12 683 | 9.90 377 | 9 | 15 | 40 | 6.7 |
| 46 | 9.77 711 | 17 | 9.87 343 | 26 | 0.12 657 | 9.90 368 | 9 | 14 | 50 | 8.3 |
| 47 | 9.77 728 | 17 | 9.87 369 | 27 | 0.12 631 | 9.90 358 | 10 | 13 | | |
| 48 | 9.77 744 | 16 | 9.87 396 | 26 | 0.12 604 | 9.90 349 | 9 | 12 | | |
| 49 | 9.77 761 | 17 | 9.87 422 | 27 | 0.12 578 | 9.90 339 | 9 | 11 | 9 | 9 |
| 50 | 9.77 778 | 17 | 9.87 448 | 26 | 0.12 552 | 9.90 330 | 9 | 10 | 27 | 26 |
| 51 | 9.77 795 | 17 | 9.87 475 | 27 | 0.12 525 | 9.90 320 | 10 | 9 | 0 | |
| 52 | 9.77 812 | 17 | 9.87 501 | 26 | 0.12 499 | 9.90 311 | 9 | 8 | 1 | 1.5 |
| 53 | 9.77 829 | 17 | 9.87 527 | 27 | 0.12 473 | 9.90 301 | 10 | 7 | 2 | 4.5 |
| 54 | 9.77 846 | 16 | 9.87 554 | 26 | 0.12 446 | 9.90 292 | 9 | 6 | 3 | 7.5 |
| 55 | 9.77 862 | 17 | 9.87 580 | 27 | 0.12 420 | 9.90 282 | 10 | 5 | 4 | 10.5 |
| 56 | 9.77 879 | 17 | 9.87 606 | 26 | 0.12 394 | 9.90 273 | 9 | 4 | 5 | 13.5 |
| 57 | 9.77 896 | 17 | 9.87 633 | 27 | 0.12 367 | 9.90 263 | 10 | 3 | 6 | 15.5 |
| 58 | 9.77 913 | 17 | 9.87 659 | 26 | 0.12 341 | 9.90 254 | 9 | 2 | 7 | 19.5 |
| 59 | 9.77 930 | 17 | 9.87 685 | 27 | 0.12 315 | 9.90 244 | 10 | 1 | 8 | 22.5 |
| 60 | 9.77 946 | 16 | 9.87 711 | 26 | 0.12 289 | 9.90 235 | 9 | 0 | 9 | 25.5 |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | P | P |

| ' | L Sin | d | L Tan | ed | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|----|----------|----------|----|----|----|------|
| 0 | 9.77 946 | | 9.87 711 | | 0.12 289 | 9.90 235 | | 60 | | |
| 1 | 9.77 963 | 17 | 9.87 738 | 27 | 0.12 262 | 9.90 225 | 10 | 59 | 27 | 26 |
| 2 | 9.77 980 | 17 | 9.87 764 | 26 | 0.12 236 | 9.90 216 | 9 | 58 | 1 | 0.4 |
| 3 | 9.77 997 | 16 | 9.87 790 | 27 | 0.12 210 | 9.90 206 | 9 | 57 | 2 | 0.9 |
| 4 | 9.78 013 | 17 | 9.87 817 | 26 | 0.12 183 | 9.90 197 | 10 | 56 | 3 | 1.4 |
| 5 | 9.78 030 | 17 | 9.87 843 | 26 | 0.12 157 | 9.90 187 | 9 | 55 | 4 | 1.8 |
| 6 | 9.78 047 | 16 | 9.87 869 | 26 | 0.12 131 | 9.90 178 | 10 | 54 | 5 | 2.2 |
| 7 | 9.78 063 | 17 | 9.87 895 | 27 | 0.12 105 | 9.90 168 | 9 | 53 | 6 | 2.7 |
| 8 | 9.78 080 | 17 | 9.87 922 | 26 | 0.12 078 | 9.90 159 | 10 | 52 | 7 | 3.2 |
| 9 | 9.78 097 | 16 | 9.87 948 | 26 | 0.12 052 | 9.90 149 | 9 | 51 | 8 | 3.6 |
| 10 | 9.78 113 | 17 | 9.87 974 | 27 | 0.12 026 | 9.90 139 | 10 | 50 | 9 | 4.0 |
| 11 | 9.78 130 | 17 | 9.88 000 | 26 | 0.12 000 | 9.90 130 | 9 | 49 | 10 | 4.5 |
| 12 | 9.78 147 | 16 | 9.88 027 | 26 | 0.11 973 | 9.90 120 | 10 | 48 | 20 | 9.0 |
| 13 | 9.78 163 | 17 | 9.88 053 | 26 | 0.11 947 | 9.90 111 | 9 | 47 | 30 | 13.5 |
| 14 | 9.78 180 | 17 | 9.88 079 | 26 | 0.11 921 | 9.90 101 | 10 | 46 | 40 | 18.0 |
| 15 | 9.78 197 | 16 | 9.88 105 | 26 | 0.11 895 | 9.90 091 | 9 | 45 | 50 | 22.5 |
| 16 | 9.78 213 | 17 | 9.88 131 | 27 | 0.11 869 | 9.90 082 | 10 | 44 | | |
| 17 | 9.78 230 | 16 | 9.88 158 | 26 | 0.11 842 | 9.90 072 | 9 | 43 | 17 | 16 |
| 18 | 9.78 246 | 17 | 9.88 184 | 26 | 0.11 816 | 9.90 063 | 10 | 42 | 1 | 0.3 |
| 19 | 9.78 263 | 17 | 9.88 210 | 26 | 0.11 790 | 9.90 053 | 9 | 41 | 2 | 0.6 |
| 20 | 9.78 280 | 16 | 9.88 236 | 26 | 0.11 764 | 9.90 043 | 10 | 40 | 3 | 0.8 |
| 21 | 9.78 296 | 17 | 9.88 262 | 27 | 0.11 738 | 9.90 034 | 9 | 39 | 4 | 1.1 |
| 22 | 9.78 313 | 16 | 9.88 289 | 26 | 0.11 711 | 9.90 024 | 10 | 38 | 5 | 1.4 |
| 23 | 9.78 329 | 17 | 9.88 315 | 26 | 0.11 685 | 9.90 014 | 9 | 37 | 6 | 1.7 |
| 24 | 9.78 346 | 16 | 9.88 341 | 26 | 0.11 659 | 9.90 005 | 10 | 36 | 7 | 2.0 |
| 25 | 9.78 362 | 17 | 9.88 367 | 26 | 0.11 633 | 9.89 995 | 9 | 35 | 8 | 2.3 |
| 26 | 9.78 379 | 16 | 9.88 393 | 27 | 0.11 607 | 9.89 985 | 10 | 34 | 9 | 2.6 |
| 27 | 9.78 395 | 17 | 9.88 420 | 26 | 0.11 580 | 9.89 976 | 9 | 33 | 10 | 2.8 |
| 28 | 9.78 412 | 16 | 9.88 446 | 26 | 0.11 554 | 9.89 966 | 10 | 32 | 20 | 5.7 |
| 29 | 9.78 428 | 17 | 9.88 472 | 26 | 0.11 528 | 9.89 956 | 9 | 31 | 30 | 8.5 |
| 30 | 9.78 445 | 16 | 9.88 498 | 26 | 0.11 502 | 9.89 947 | 10 | 30 | 40 | 11.3 |
| 31 | 9.78 461 | 17 | 9.88 524 | 26 | 0.11 476 | 9.89 937 | 9 | 29 | 50 | 14.2 |
| 32 | 9.78 478 | 16 | 9.88 550 | 27 | 0.11 450 | 9.89 927 | 10 | 28 | | |
| 33 | 9.78 494 | 16 | 9.88 577 | 26 | 0.11 423 | 9.89 918 | 9 | 27 | 10 | 9 |
| 34 | 9.78 510 | 17 | 9.88 603 | 26 | 0.11 397 | 9.89 908 | 10 | 26 | 1 | 0.2 |
| 35 | 9.78 527 | 16 | 9.88 629 | 26 | 0.11 371 | 9.89 898 | 9 | 25 | 2 | 0.3 |
| 36 | 9.78 543 | 17 | 9.88 655 | 26 | 0.11 345 | 9.89 888 | 10 | 24 | 3 | 0.5 |
| 37 | 9.78 560 | 16 | 9.88 681 | 26 | 0.11 319 | 9.89 879 | 9 | 23 | 4 | 0.7 |
| 38 | 9.78 576 | 17 | 9.88 707 | 26 | 0.11 293 | 9.89 869 | 10 | 22 | 5 | 0.8 |
| 39 | 9.78 592 | 16 | 9.88 733 | 26 | 0.11 267 | 9.89 859 | 9 | 21 | 6 | 1.0 |
| 40 | 9.78 609 | 17 | 9.88 759 | 27 | 0.11 241 | 9.89 849 | 10 | 20 | 7 | 1.2 |
| 41 | 9.78 625 | 16 | 9.88 786 | 26 | 0.11 214 | 9.89 840 | 9 | 19 | 8 | 1.3 |
| 42 | 9.78 642 | 17 | 9.88 812 | 26 | 0.11 188 | 9.89 830 | 10 | 18 | 9 | 1.5 |
| 43 | 9.78 658 | 16 | 9.88 838 | 26 | 0.11 162 | 9.89 820 | 9 | 17 | 10 | 1.7 |
| 44 | 9.78 674 | 17 | 9.88 864 | 26 | 0.11 136 | 9.89 810 | 10 | 16 | 20 | 3.3 |
| 45 | 9.78 691 | 16 | 9.88 890 | 26 | 0.11 110 | 9.89 801 | 9 | 15 | 30 | 5.0 |
| 46 | 9.78 707 | 17 | 9.88 916 | 26 | 0.11 084 | 9.89 791 | 10 | 14 | 40 | 6.7 |
| 47 | 9.78 723 | 16 | 9.88 942 | 26 | 0.11 058 | 9.89 781 | 9 | 13 | 50 | 8.3 |
| 48 | 9.78 739 | 17 | 9.88 968 | 26 | 0.11 032 | 9.89 771 | 10 | 12 | | |
| 49 | 9.78 756 | 16 | 9.88 994 | 26 | 0.11 006 | 9.89 761 | 9 | 11 | 10 | 10 |
| 50 | 9.78 772 | 17 | 9.89 020 | 26 | 0.10 980 | 9.89 752 | 10 | 10 | 27 | 26 |
| 51 | 9.78 788 | 16 | 9.89 046 | 27 | 0.10 954 | 9.89 742 | 9 | 9 | 0 | |
| 52 | 9.78 805 | 17 | 9.89 073 | 26 | 0.10 927 | 9.89 732 | 10 | 8 | 1 | 1.4 |
| 53 | 9.78 821 | 16 | 9.89 099 | 26 | 0.10 901 | 9.89 722 | 9 | 7 | 2 | 4.1 |
| 54 | 9.78 837 | 17 | 9.89 125 | 26 | 0.10 875 | 9.89 712 | 10 | 6 | 3 | 6.8 |
| 55 | 9.78 853 | 16 | 9.89 151 | 26 | 0.10 849 | 9.89 702 | 9 | 5 | 4 | 9.4 |
| 56 | 9.78 869 | 17 | 9.89 177 | 26 | 0.10 823 | 9.89 693 | 10 | 4 | 5 | 12.2 |
| 57 | 9.78 886 | 16 | 9.89 203 | 26 | 0.10 797 | 9.89 683 | 9 | 3 | 6 | 14.8 |
| 58 | 9.78 902 | 17 | 9.89 229 | 26 | 0.10 771 | 9.89 673 | 10 | 2 | 7 | 17.6 |
| 59 | 9.78 918 | 16 | 9.89 255 | 26 | 0.10 745 | 9.89 663 | 9 | 1 | 8 | 20.2 |
| 60 | 9.78 934 | 17 | 9.89 281 | 26 | 0.10 719 | 9.89 653 | 10 | 0 | 9 | 22.9 |
| | | | | | | | | | 10 | 25.6 |
| | L Cos | d | L Cot | ed | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P P | | | | |
|----|----------|----|----------|-----|----------|----------|----|----|-----|------|------|------|----|
| 0 | 9.78 934 | 16 | 9.89 281 | 26 | 0.10 719 | 9.89 653 | 10 | 60 | | | 26 | 25 | |
| 1 | 9.78 950 | 17 | 9.89 307 | 26 | 0.10 693 | 9.89 643 | 10 | 59 | | | | | |
| 2 | 9.78 967 | 16 | 9.89 333 | 26 | 0.10 667 | 9.89 633 | 10 | 58 | 1 | 0.4 | 0.4 | | |
| 3 | 9.78 983 | 16 | 9.89 359 | 26 | 0.10 641 | 9.89 624 | 9 | 57 | 2 | 0.9 | 0.8 | | |
| 4 | 9.78 999 | 16 | 9.89 385 | 26 | 0.10 615 | 9.89 614 | 10 | 56 | 3 | 1.3 | 1.2 | | |
| 5 | 9.79 015 | 16 | 9.89 411 | 26 | 0.10 589 | 9.89 604 | 10 | 55 | 4 | 1.7 | 1.7 | | |
| 6 | 9.79 031 | 16 | 9.89 437 | 26 | 0.10 563 | 9.89 594 | 10 | 54 | 5 | 2.2 | 2.1 | | |
| 7 | 9.79 047 | 16 | 9.89 463 | 26 | 0.10 537 | 9.89 584 | 10 | 53 | 6 | 2.6 | 2.5 | | |
| 8 | 9.79 063 | 16 | 9.89 489 | 26 | 0.10 511 | 9.89 574 | 10 | 52 | 7 | 3.0 | 2.9 | | |
| 9 | 9.79 079 | 16 | 9.89 515 | 26 | 0.10 485 | 9.89 564 | 10 | 51 | 8 | 3.5 | 3.3 | | |
| 10 | 9.79 095 | 16 | 9.89 541 | 26 | 0.10 459 | 9.89 554 | 10 | 50 | 9 | 3.9 | 3.8 | | |
| 11 | 9.79 111 | 17 | 9.89 567 | 26 | 0.10 433 | 9.89 544 | 10 | 49 | 10 | 4.3 | 4.2 | | |
| 12 | 9.79 128 | 16 | 9.89 593 | 26 | 0.10 407 | 9.89 534 | 10 | 48 | 20 | 8.7 | 8.3 | | |
| 13 | 9.79 144 | 16 | 9.89 619 | 26 | 0.10 381 | 9.89 524 | 10 | 47 | 30 | 13.0 | 12.5 | | |
| 14 | 9.79 160 | 16 | 9.89 645 | 26 | 0.10 355 | 9.89 514 | 10 | 46 | 40 | 17.3 | 16.7 | | |
| 15 | 9.79 176 | 16 | 9.89 671 | 26 | 0.10 329 | 9.89 504 | 10 | 45 | 50 | 21.7 | 20.8 | | |
| 16 | 9.79 192 | 16 | 9.89 697 | 26 | 0.10 303 | 9.89 495 | 9 | 44 | | | 17 | 16 | 15 |
| 17 | 9.79 208 | 16 | 9.89 723 | 26 | 0.10 277 | 9.89 485 | 10 | 43 | 1 | 0.3 | 0.3 | 0.2 | |
| 18 | 9.79 224 | 16 | 9.89 749 | 26 | 0.10 251 | 9.89 475 | 10 | 42 | 2 | 0.6 | 0.5 | 0.5 | |
| 19 | 9.79 240 | 16 | 9.89 775 | 26 | 0.10 225 | 9.89 465 | 10 | 41 | 3 | 0.8 | 0.8 | 0.8 | |
| 20 | 9.79 256 | 16 | 9.89 801 | 26 | 0.10 199 | 9.89 455 | 10 | 40 | 4 | 1.1 | 1.1 | 1.0 | |
| 21 | 9.79 272 | 16 | 9.89 827 | 26 | 0.10 173 | 9.89 445 | 10 | 39 | 5 | 1.4 | 1.3 | 1.2 | |
| 22 | 9.79 288 | 16 | 9.89 853 | 26 | 0.10 147 | 9.89 435 | 10 | 38 | 6 | 1.7 | 1.6 | 1.5 | |
| 23 | 9.79 304 | 15 | 9.89 879 | 26 | 0.10 121 | 9.89 425 | 10 | 37 | 7 | 2.0 | 1.9 | 1.8 | |
| 24 | 9.79 319 | 16 | 9.89 905 | 26 | 0.10 095 | 9.89 415 | 10 | 36 | 8 | 2.3 | 2.1 | 2.0 | |
| 25 | 9.79 335 | 16 | 9.89 931 | 26 | 0.10 069 | 9.89 405 | 10 | 35 | 9 | 2.6 | 2.4 | 2.2 | |
| 26 | 9.79 351 | 16 | 9.89 957 | 26 | 0.10 043 | 9.89 395 | 10 | 34 | 10 | 2.8 | 2.7 | 2.5 | |
| 27 | 9.79 367 | 16 | 9.89 983 | 26 | 0.10 017 | 9.89 385 | 10 | 33 | 20 | 5.7 | 5.3 | 5.0 | |
| 28 | 9.79 383 | 16 | 9.90 009 | 26 | 0.09 991 | 9.89 375 | 10 | 32 | 30 | 8.5 | 8.0 | 7.5 | |
| 29 | 9.79 399 | 16 | 9.90 035 | 26 | 0.09 965 | 9.89 364 | 11 | 31 | 40 | 11.3 | 10.7 | 10.0 | |
| 30 | 9.79 415 | 16 | 9.90 061 | 25 | 0.09 939 | 9.89 354 | 10 | 30 | 50 | 14.2 | 13.3 | 12.5 | |
| 31 | 9.79 431 | 16 | 9.90 086 | 26 | 0.09 914 | 9.89 344 | 10 | 29 | | | 11 | 10 | 9 |
| 32 | 9.79 447 | 16 | 9.90 112 | 26 | 0.09 888 | 9.89 334 | 10 | 28 | 1 | 0.2 | 0.2 | 0.2 | |
| 33 | 9.79 463 | 15 | 9.90 138 | 26 | 0.09 862 | 9.89 324 | 10 | 27 | 2 | 0.4 | 0.3 | 0.3 | |
| 34 | 9.79 478 | 16 | 9.90 164 | 26 | 0.09 836 | 9.89 314 | 10 | 26 | 3 | 0.6 | 0.5 | 0.4 | |
| 35 | 9.79 494 | 16 | 9.90 190 | 26 | 0.09 810 | 9.89 304 | 10 | 25 | 4 | 0.7 | 0.7 | 0.6 | |
| 36 | 9.79 510 | 16 | 9.90 216 | 26 | 0.09 784 | 9.89 294 | 10 | 24 | 5 | 0.9 | 0.8 | 0.8 | |
| 37 | 9.79 526 | 16 | 9.90 242 | 26 | 0.09 758 | 9.89 284 | 10 | 23 | 6 | 1.1 | 1.0 | 0.9 | |
| 38 | 9.79 542 | 16 | 9.90 268 | 26 | 0.09 732 | 9.89 274 | 10 | 22 | 7 | 1.3 | 1.2 | 1.0 | |
| 39 | 9.79 558 | 15 | 9.90 294 | 26 | 0.09 706 | 9.89 264 | 10 | 21 | 8 | 1.5 | 1.3 | 1.2 | |
| 40 | 9.79 573 | 16 | 9.90 320 | 26 | 0.09 680 | 9.89 254 | 10 | 20 | 9 | 1.6 | 1.5 | 1.4 | |
| 41 | 9.79 589 | 16 | 9.90 346 | 25 | 0.09 654 | 9.89 244 | 11 | 19 | 10 | 1.8 | 1.7 | 1.5 | |
| 42 | 9.79 605 | 16 | 9.90 371 | 26 | 0.09 629 | 9.89 233 | 10 | 18 | 20 | 3.7 | 3.3 | 3.0 | |
| 43 | 9.79 621 | 15 | 9.90 397 | 26 | 0.09 603 | 9.89 223 | 10 | 17 | 30 | 5.5 | 5.0 | 4.5 | |
| 44 | 9.79 636 | 16 | 9.90 423 | 26 | 0.09 577 | 9.89 213 | 10 | 16 | 40 | 7.3 | 6.7 | 6.0 | |
| 45 | 9.79 652 | 16 | 9.90 449 | 26 | 0.09 551 | 9.89 203 | 10 | 15 | 50 | 9.2 | 8.3 | 7.5 | |
| 46 | 9.79 668 | 16 | 9.90 475 | 26 | 0.09 525 | 9.89 193 | 10 | 14 | | | | | |
| 47 | 9.79 684 | 15 | 9.90 501 | 26 | 0.09 499 | 9.89 183 | 10 | 13 | | | 10 | 10 | 9 |
| 48 | 9.79 699 | 16 | 9.90 527 | 26 | 0.09 473 | 9.89 173 | 10 | 12 | | | 26 | 25 | 26 |
| 49 | 9.79 715 | 16 | 9.90 553 | 25 | 0.09 447 | 9.89 162 | 10 | 11 | | | | | |
| 50 | 9.79 731 | 15 | 9.90 578 | 26 | 0.09 422 | 9.89 152 | 10 | 10 | 0 | 1.3 | 1.2 | 1.1 | |
| 51 | 9.79 746 | 16 | 9.90 604 | 26 | 0.09 396 | 9.89 142 | 10 | 9 | 1 | 3.9 | 3.8 | 4.3 | |
| 52 | 9.79 762 | 16 | 9.90 630 | 26 | 0.09 370 | 9.89 132 | 10 | 8 | 2 | 6.5 | 6.2 | 7.2 | |
| 53 | 9.79 778 | 15 | 9.90 656 | 26 | 0.09 344 | 9.89 122 | 10 | 7 | 3 | 9.1 | 8.8 | 10.1 | |
| 54 | 9.79 793 | 16 | 9.90 682 | 26 | 0.09 318 | 9.89 112 | 11 | 6 | 4 | 11.7 | 11.2 | 13.0 | |
| 55 | 9.79 809 | 16 | 9.90 708 | 26 | 0.09 292 | 9.89 101 | 10 | 5 | 5 | 14.3 | 13.8 | 15.9 | |
| 56 | 9.79 825 | 15 | 9.90 734 | 25 | 0.09 266 | 9.89 091 | 10 | 4 | 6 | 10.9 | 10.2 | 18.8 | |
| 57 | 9.79 840 | 16 | 9.90 759 | 26 | 0.09 241 | 9.89 081 | 10 | 3 | 7 | 19.5 | 18.8 | 21.7 | |
| 58 | 9.79 856 | 16 | 9.90 785 | 26 | 0.09 215 | 9.89 071 | 11 | 2 | 8 | 22.1 | 21.2 | 24.6 | |
| 59 | 9.79 872 | 15 | 9.90 811 | 26 | 0.09 189 | 9.89 060 | 10 | 1 | 9 | 24.7 | 23.8 | — | |
| 60 | 9.79 887 | 15 | 9.90 837 | 26 | 0.09 163 | 9.89 050 | 10 | 0 | 10 | | | | |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | | P P | | | |

39°

*129° 219° *309°

| | L Sin | d | L Tan | cd | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|----|----------|----------|----|----|----|------|
| 0 | 9.79 887 | 16 | 9.90 837 | 26 | 0.09 163 | 9.89 050 | 10 | 60 | | |
| 1 | 9.79 903 | 15 | 9.90 863 | 26 | 0.09 137 | 9.89 040 | 10 | 59 | 26 | 25 |
| 2 | 9.79 918 | 15 | 9.90 889 | 25 | 0.09 111 | 9.89 030 | 10 | 58 | 1 | 0.4 |
| 3 | 9.79 934 | 16 | 9.90 914 | 26 | 0.09 086 | 9.89 020 | 10 | 57 | 2 | 0.9 |
| 4 | 9.79 950 | 15 | 9.90 940 | 26 | 0.09 060 | 9.89 009 | 10 | 56 | 3 | 1.3 |
| 5 | 9.79 965 | 15 | 9.90 966 | 26 | 0.09 034 | 9.88 999 | 10 | 55 | 4 | 1.7 |
| 6 | 9.79 981 | 16 | 9.90 992 | 26 | 0.09 008 | 9.88 989 | 10 | 54 | 5 | 2.2 |
| 7 | 9.79 996 | 15 | 9.91 018 | 25 | 0.08 982 | 9.88 978 | 10 | 53 | 6 | 2.6 |
| 8 | 9.80 012 | 16 | 9.91 043 | 26 | 0.08 957 | 9.88 968 | 10 | 52 | 7 | 3.0 |
| 9 | 9.80 027 | 15 | 9.91 069 | 26 | 0.08 931 | 9.88 958 | 10 | 51 | 8 | 3.5 |
| 10 | 9.80 043 | 16 | 9.91 095 | 26 | 0.08 905 | 9.88 948 | 10 | 50 | 9 | 3.9 |
| 11 | 9.80 058 | 15 | 9.91 121 | 26 | 0.08 879 | 9.88 937 | 10 | 49 | 10 | 4.3 |
| 12 | 9.80 074 | 16 | 9.91 147 | 25 | 0.08 853 | 9.88 927 | 10 | 48 | 20 | 8.7 |
| 13 | 9.80 089 | 15 | 9.91 172 | 26 | 0.08 828 | 9.88 917 | 10 | 47 | 30 | 13.0 |
| 14 | 9.80 105 | 16 | 9.91 198 | 26 | 0.08 802 | 9.88 906 | 10 | 46 | 40 | 17.3 |
| 15 | 9.80 120 | 15 | 9.91 224 | 26 | 0.08 776 | 9.88 896 | 10 | 45 | 50 | 21.7 |
| 16 | 9.80 136 | 16 | 9.91 250 | 26 | 0.08 750 | 9.88 886 | 10 | 44 | | 16 |
| 17 | 9.80 151 | 15 | 9.91 276 | 25 | 0.08 724 | 9.88 875 | 10 | 43 | | 15 |
| 18 | 9.80 166 | 16 | 9.91 301 | 26 | 0.08 699 | 9.88 865 | 10 | 42 | 1 | 0.3 |
| 19 | 9.80 182 | 15 | 9.91 327 | 26 | 0.08 673 | 9.88 855 | 10 | 41 | 2 | 0.5 |
| 20 | 9.80 197 | 16 | 9.91 353 | 26 | 0.08 647 | 9.88 844 | 10 | 40 | 3 | 0.8 |
| 21 | 9.80 213 | 15 | 9.91 379 | 25 | 0.08 621 | 9.88 834 | 10 | 39 | 4 | 1.1 |
| 22 | 9.80 228 | 16 | 9.91 404 | 26 | 0.08 596 | 9.88 824 | 10 | 38 | 5 | 1.3 |
| 23 | 9.80 244 | 15 | 9.91 430 | 26 | 0.08 570 | 9.88 813 | 10 | 37 | 6 | 1.6 |
| 24 | 9.80 259 | 16 | 9.91 456 | 26 | 0.08 544 | 9.88 803 | 10 | 36 | 7 | 1.9 |
| 25 | 9.80 274 | 15 | 9.91 482 | 25 | 0.08 518 | 9.88 793 | 10 | 35 | 8 | 2.1 |
| 26 | 9.80 290 | 16 | 9.91 507 | 26 | 0.08 493 | 9.88 782 | 10 | 34 | 9 | 2.4 |
| 27 | 9.80 305 | 15 | 9.91 533 | 26 | 0.08 467 | 9.88 772 | 10 | 33 | 10 | 2.7 |
| 28 | 9.80 320 | 16 | 9.91 559 | 26 | 0.08 441 | 9.88 761 | 10 | 32 | 20 | 5.3 |
| 29 | 9.80 336 | 15 | 9.91 585 | 25 | 0.08 415 | 9.88 751 | 10 | 31 | 30 | 8.0 |
| 30 | 9.80 351 | 16 | 9.91 610 | 26 | 0.08 390 | 9.88 741 | 10 | 30 | 40 | 10.7 |
| 31 | 9.80 366 | 15 | 9.91 636 | 26 | 0.08 364 | 9.88 730 | 10 | 29 | 50 | 13.3 |
| 32 | 9.80 382 | 16 | 9.91 662 | 26 | 0.08 338 | 9.88 720 | 10 | 28 | | 11 |
| 33 | 9.80 397 | 15 | 9.91 688 | 25 | 0.08 312 | 9.88 709 | 10 | 27 | 1 | 0.2 |
| 34 | 9.80 412 | 16 | 9.91 713 | 26 | 0.08 287 | 9.88 699 | 10 | 26 | 2 | 0.4 |
| 35 | 9.80 428 | 15 | 9.91 739 | 26 | 0.08 261 | 9.88 688 | 10 | 25 | 3 | 0.6 |
| 36 | 9.80 443 | 16 | 9.91 765 | 26 | 0.08 235 | 9.88 678 | 10 | 24 | 4 | 0.7 |
| 37 | 9.80 458 | 15 | 9.91 791 | 25 | 0.08 209 | 9.88 668 | 10 | 23 | 5 | 0.9 |
| 38 | 9.80 473 | 16 | 9.91 816 | 26 | 0.08 184 | 9.88 657 | 10 | 22 | 6 | 1.1 |
| 39 | 9.80 489 | 15 | 9.91 842 | 26 | 0.08 158 | 9.88 647 | 10 | 21 | 7 | 1.3 |
| 40 | 9.80 504 | 16 | 9.91 868 | 25 | 0.08 132 | 9.88 636 | 10 | 20 | 8 | 1.5 |
| 41 | 9.80 519 | 15 | 9.91 893 | 26 | 0.08 107 | 9.88 626 | 10 | 19 | 9 | 1.6 |
| 42 | 9.80 534 | 16 | 9.91 919 | 26 | 0.08 081 | 9.88 615 | 10 | 18 | 10 | 1.8 |
| 43 | 9.80 550 | 15 | 9.91 945 | 25 | 0.08 055 | 9.88 605 | 10 | 17 | 20 | 3.7 |
| 44 | 9.80 565 | 16 | 9.91 971 | 26 | 0.08 029 | 9.88 594 | 10 | 16 | 30 | 5.5 |
| 45 | 9.80 580 | 15 | 9.91 996 | 26 | 0.08 004 | 9.88 584 | 10 | 15 | 40 | 7.3 |
| 46 | 9.80 595 | 16 | 9.92 022 | 26 | 0.07 978 | 9.88 573 | 10 | 14 | 50 | 9.2 |
| 47 | 9.80 610 | 15 | 9.92 048 | 25 | 0.07 952 | 9.88 563 | 10 | 13 | | 11 |
| 48 | 9.80 625 | 16 | 9.92 073 | 26 | 0.07 927 | 9.88 552 | 10 | 12 | | 11 |
| 49 | 9.80 641 | 15 | 9.92 099 | 26 | 0.07 901 | 9.88 542 | 10 | 11 | | 26 |
| 50 | 9.80 656 | 16 | 9.92 125 | 25 | 0.07 875 | 9.88 531 | 10 | 10 | 0 | 1.2 |
| 51 | 9.80 671 | 15 | 9.92 150 | 26 | 0.07 850 | 9.88 521 | 10 | 9 | 1 | 3.5 |
| 52 | 9.80 686 | 16 | 9.92 176 | 26 | 0.07 824 | 9.88 510 | 10 | 8 | 2 | 5.9 |
| 53 | 9.80 701 | 15 | 9.92 202 | 25 | 0.07 798 | 9.88 499 | 10 | 7 | 3 | 8.3 |
| 54 | 9.80 716 | 16 | 9.92 227 | 26 | 0.07 773 | 9.88 489 | 10 | 6 | 4 | 10.6 |
| 55 | 9.80 731 | 15 | 9.92 253 | 26 | 0.07 747 | 9.88 478 | 10 | 5 | 5 | 13.0 |
| 56 | 9.80 746 | 16 | 9.92 279 | 25 | 0.07 721 | 9.88 468 | 10 | 4 | 6 | 15.4 |
| 57 | 9.80 762 | 15 | 9.92 304 | 26 | 0.07 696 | 9.88 457 | 10 | 3 | 7 | 17.7 |
| 58 | 9.80 777 | 16 | 9.92 330 | 26 | 0.07 670 | 9.88 447 | 10 | 2 | 8 | 20.1 |
| 59 | 9.80 792 | 15 | 9.92 356 | 25 | 0.07 644 | 9.88 436 | 10 | 1 | 9 | 22.5 |
| 60 | 9.80 807 | 16 | 9.92 381 | 26 | 0.07 619 | 9.88 425 | 10 | 0 | 10 | 24.8 |
| | L Cos | d | L Cot | cd | L Tan | L Sin | d | | P | P |

*140° 230° *320°

50°

| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P P | | |
|----|----------|----|----------|-----|----------|----------|----|----|-----|------|------|
| 0 | 9.80 807 | | 9.92 381 | | 0.07 619 | 9.88 425 | | 60 | | 26 | 25 |
| 1 | 9.80 822 | 15 | 9.92 407 | 26 | 0.07 593 | 9.88 415 | 10 | 59 | 1 | 0.4 | 0.4 |
| 2 | 9.80 837 | 15 | 9.92 433 | 26 | 0.07 567 | 9.88 404 | 10 | 58 | 2 | 0.9 | 0.8 |
| 3 | 9.80 852 | 15 | 9.92 458 | 25 | 0.07 542 | 9.88 394 | 11 | 57 | 3 | 1.3 | 1.2 |
| 4 | 9.80 867 | 15 | 9.92 484 | 26 | 0.07 516 | 9.88 383 | 11 | 56 | 4 | 1.7 | 1.7 |
| 5 | 9.80 882 | 15 | 9.92 510 | 26 | 0.07 490 | 9.88 372 | 10 | 55 | 5 | 2.2 | 2.1 |
| 6 | 9.80 897 | 15 | 9.92 535 | 25 | 0.07 465 | 9.88 362 | 11 | 54 | 6 | 2.6 | 2.5 |
| 7 | 9.80 912 | 15 | 9.92 561 | 26 | 0.07 439 | 9.88 351 | 11 | 53 | 7 | 3.0 | 2.9 |
| 8 | 9.80 927 | 15 | 9.92 587 | 26 | 0.07 413 | 9.88 340 | 10 | 52 | 8 | 3.5 | 3.3 |
| 9 | 9.80 942 | 15 | 9.92 612 | 25 | 0.07 388 | 9.88 330 | 11 | 51 | 9 | 3.9 | 3.8 |
| 10 | 9.80 957 | 15 | 9.92 638 | 26 | 0.07 362 | 9.88 319 | 11 | 50 | 10 | 4.3 | 4.2 |
| 11 | 9.80 972 | 15 | 9.92 663 | 25 | 0.07 337 | 9.88 308 | 10 | 49 | 20 | 8.7 | 8.3 |
| 12 | 9.80 987 | 15 | 9.92 689 | 26 | 0.07 311 | 9.88 298 | 11 | 48 | 30 | 13.0 | 12.5 |
| 13 | 9.81 002 | 15 | 9.92 715 | 26 | 0.07 285 | 9.88 287 | 11 | 47 | 40 | 17.3 | 16.7 |
| 14 | 9.81 017 | 15 | 9.92 740 | 25 | 0.07 260 | 9.88 276 | 10 | 46 | 50 | 21.7 | 20.8 |
| 15 | 9.81 032 | 15 | 9.92 766 | 26 | 0.07 234 | 9.88 266 | 11 | 45 | | 15 | 14 |
| 16 | 9.81 047 | 15 | 9.92 792 | 26 | 0.07 208 | 9.88 255 | 11 | 44 | 1 | 0.2 | 0.2 |
| 17 | 9.81 061 | 14 | 9.92 817 | 25 | 0.07 183 | 9.88 244 | 10 | 43 | 2 | 0.5 | 0.5 |
| 18 | 9.81 076 | 15 | 9.92 843 | 26 | 0.07 157 | 9.88 234 | 11 | 42 | 3 | 0.8 | 0.7 |
| 19 | 9.81 091 | 15 | 9.92 868 | 25 | 0.07 132 | 9.88 223 | 11 | 41 | 4 | 1.0 | 0.9 |
| 20 | 9.81 106 | 15 | 9.92 894 | 26 | 0.07 106 | 9.88 212 | 11 | 40 | 5 | 1.2 | 1.2 |
| 21 | 9.81 121 | 15 | 9.92 920 | 26 | 0.07 080 | 9.88 201 | 10 | 39 | 6 | 1.5 | 1.4 |
| 22 | 9.81 136 | 15 | 9.92 945 | 25 | 0.07 055 | 9.88 191 | 11 | 38 | 7 | 1.8 | 1.6 |
| 23 | 9.81 151 | 15 | 9.92 971 | 26 | 0.07 029 | 9.88 180 | 11 | 37 | 8 | 2.0 | 1.9 |
| 24 | 9.81 166 | 15 | 9.92 996 | 25 | 0.07 004 | 9.88 169 | 11 | 36 | 9 | 2.2 | 2.1 |
| 25 | 9.81 180 | 14 | 9.93 022 | 26 | 0.06 978 | 9.88 158 | 10 | 35 | 10 | 2.5 | 2.3 |
| 26 | 9.81 195 | 15 | 9.93 048 | 26 | 0.06 952 | 9.88 148 | 11 | 34 | 20 | 5.0 | 4.7 |
| 27 | 9.81 210 | 15 | 9.93 073 | 25 | 0.06 927 | 9.88 137 | 11 | 33 | 30 | 7.5 | 7.0 |
| 28 | 9.81 225 | 15 | 9.93 099 | 26 | 0.06 901 | 9.88 126 | 11 | 32 | 40 | 10.0 | 9.3 |
| 29 | 9.81 240 | 15 | 9.93 124 | 25 | 0.06 876 | 9.88 115 | 10 | 31 | 50 | 12.5 | 11.7 |
| 30 | 9.81 254 | 14 | 9.93 150 | 26 | 0.06 850 | 9.88 105 | 11 | 30 | | 11 | 10 |
| 31 | 9.81 269 | 15 | 9.93 175 | 25 | 0.06 825 | 9.88 094 | 11 | 29 | 1 | 0.2 | 0.2 |
| 32 | 9.81 284 | 15 | 9.93 201 | 26 | 0.06 799 | 9.88 083 | 11 | 28 | 2 | 0.4 | 0.3 |
| 33 | 9.81 299 | 15 | 9.93 227 | 26 | 0.06 773 | 9.88 072 | 11 | 27 | 3 | 0.6 | 0.5 |
| 34 | 9.81 314 | 15 | 9.93 252 | 25 | 0.06 748 | 9.88 061 | 10 | 26 | 4 | 0.7 | 0.7 |
| 35 | 9.81 328 | 14 | 9.93 278 | 26 | 0.06 722 | 9.88 051 | 11 | 25 | 5 | 0.9 | 0.8 |
| 36 | 9.81 343 | 15 | 9.93 303 | 26 | 0.06 697 | 9.88 040 | 11 | 24 | 6 | 1.1 | 1.0 |
| 37 | 9.81 358 | 15 | 9.93 329 | 26 | 0.06 671 | 9.88 029 | 11 | 23 | 7 | 1.3 | 1.2 |
| 38 | 9.81 372 | 14 | 9.93 354 | 25 | 0.06 646 | 9.88 018 | 11 | 22 | 8 | 1.5 | 1.3 |
| 39 | 9.81 387 | 15 | 9.93 380 | 26 | 0.06 620 | 9.88 007 | 11 | 21 | 9 | 1.6 | 1.5 |
| 40 | 9.81 402 | 15 | 9.93 406 | 26 | 0.06 594 | 9.87 996 | 11 | 20 | 10 | 1.8 | 1.7 |
| 41 | 9.81 417 | 15 | 9.93 431 | 25 | 0.06 569 | 9.87 985 | 11 | 19 | 20 | 3.7 | 3.3 |
| 42 | 9.81 431 | 14 | 9.93 457 | 26 | 0.06 543 | 9.87 975 | 10 | 18 | 30 | 5.5 | 5.0 |
| 43 | 9.81 446 | 15 | 9.93 482 | 26 | 0.06 518 | 9.87 964 | 11 | 17 | 40 | 7.3 | 6.7 |
| 44 | 9.81 461 | 15 | 9.93 508 | 26 | 0.06 492 | 9.87 953 | 11 | 16 | 50 | 9.2 | 8.3 |
| 45 | 9.81 475 | 14 | 9.93 533 | 25 | 0.06 467 | 9.87 942 | 11 | 15 | | 11 | 10 |
| 46 | 9.81 490 | 15 | 9.93 559 | 25 | 0.06 441 | 9.87 931 | 11 | 14 | | 10 | 10 |
| 47 | 9.81 505 | 15 | 9.93 584 | 26 | 0.06 416 | 9.87 920 | 11 | 13 | | 26 | 25 |
| 48 | 9.81 519 | 14 | 9.93 610 | 26 | 0.06 390 | 9.87 909 | 11 | 12 | 0 | 1.2 | 1.2 |
| 49 | 9.81 534 | 15 | 9.93 636 | 26 | 0.06 364 | 9.87 898 | 11 | 11 | 1 | 3.5 | 3.3 |
| 50 | 9.81 549 | 15 | 9.93 661 | 25 | 0.06 339 | 9.87 887 | 10 | 10 | 2 | 5.0 | 6.2 |
| 51 | 9.81 563 | 14 | 9.93 687 | 26 | 0.06 313 | 9.87 877 | 11 | 9 | 3 | 8.3 | 8.8 |
| 52 | 9.81 578 | 15 | 9.93 712 | 25 | 0.06 288 | 9.87 866 | 11 | 8 | 4 | 10.6 | 11.2 |
| 53 | 9.81 592 | 14 | 9.93 738 | 26 | 0.06 262 | 9.87 855 | 11 | 7 | 5 | 13.0 | 13.8 |
| 54 | 9.81 607 | 15 | 9.93 763 | 25 | 0.06 237 | 9.87 844 | 11 | 6 | 6 | 15.4 | 16.2 |
| 55 | 9.81 622 | 15 | 9.93 789 | 26 | 0.06 211 | 9.87 833 | 11 | 5 | 7 | 17.7 | 18.8 |
| 56 | 9.81 636 | 14 | 9.93 814 | 25 | 0.06 186 | 9.87 822 | 11 | 4 | 8 | 20.1 | 21.2 |
| 57 | 9.81 651 | 15 | 9.93 840 | 26 | 0.06 160 | 9.87 811 | 11 | 3 | 9 | 22.5 | 23.8 |
| 58 | 9.81 665 | 14 | 9.93 865 | 25 | 0.06 135 | 9.87 800 | 11 | 2 | 10 | 24.8 | — |
| 59 | 9.81 680 | 15 | 9.93 891 | 26 | 0.06 109 | 9.87 789 | 11 | 1 | 11 | — | — |
| 60 | 9.81 694 | 14 | 9.93 916 | 25 | 0.06 084 | 9.87 778 | 11 | 0 | | | |
| | L Cos | d | L Cot | c d | L Sin | L Sin | d | | P P | | |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|----|----|----|------|
| 0 | 9.81 694 | | 9.93 916 | | 0.06 084 | 9.87 778 | | 60 | | |
| 1 | 9.81 709 | 15 | 9.93 942 | 26 | 0.06 058 | 9.87 767 | 11 | 59 | 26 | 25 |
| 2 | 9.81 723 | 14 | 9.93 967 | 25 | 0.06 033 | 9.87 756 | 11 | 58 | 1 | 0.4 |
| 3 | 9.81 738 | 15 | 9.93 993 | 26 | 0.06 007 | 9.87 745 | 11 | 57 | 2 | 0.9 |
| 4 | 9.81 752 | 14 | 9.94 018 | 25 | 0.05 982 | 9.87 734 | 11 | 56 | 3 | 1.3 |
| 5 | 9.81 767 | 15 | 9.94 044 | 26 | 0.05 956 | 9.87 723 | 11 | 55 | 4 | 1.7 |
| 6 | 9.81 781 | 14 | 9.94 069 | 25 | 0.05 931 | 9.87 712 | 11 | 54 | 5 | 2.2 |
| 7 | 9.81 796 | 15 | 9.94 095 | 26 | 0.05 905 | 9.87 701 | 11 | 53 | 6 | 2.6 |
| 8 | 9.81 810 | 14 | 9.94 120 | 25 | 0.05 880 | 9.87 690 | 11 | 52 | 7 | 3.0 |
| 9 | 9.81 825 | 15 | 9.94 146 | 26 | 0.05 854 | 9.87 679 | 11 | 51 | 8 | 3.5 |
| 10 | 9.81 839 | 14 | 9.94 171 | 25 | 0.05 829 | 9.87 668 | 11 | 50 | 9 | 3.9 |
| 11 | 9.81 854 | 15 | 9.94 197 | 26 | 0.05 803 | 9.87 657 | 11 | 49 | 10 | 4.3 |
| 12 | 9.81 868 | 14 | 9.94 222 | 25 | 0.05 778 | 9.87 646 | 11 | 48 | 20 | 8.7 |
| 13 | 9.81 882 | 15 | 9.94 248 | 26 | 0.05 752 | 9.87 635 | 11 | 47 | 30 | 13.0 |
| 14 | 9.81 897 | 14 | 9.94 273 | 25 | 0.05 727 | 9.87 624 | 11 | 46 | 40 | 17.3 |
| 15 | 9.81 911 | 15 | 9.94 299 | 26 | 0.05 701 | 9.87 613 | 11 | 45 | 50 | 21.7 |
| 16 | 9.81 926 | 14 | 9.94 324 | 25 | 0.05 676 | 9.87 601 | 12 | 44 | | |
| 17 | 9.81 940 | 15 | 9.94 350 | 26 | 0.05 650 | 9.87 590 | 11 | 43 | 15 | 14 |
| 18 | 9.81 955 | 14 | 9.94 375 | 25 | 0.05 625 | 9.87 579 | 11 | 42 | 1 | 0.2 |
| 19 | 9.81 969 | 15 | 9.94 401 | 26 | 0.05 599 | 9.87 568 | 11 | 41 | 2 | 0.5 |
| 20 | 9.81 983 | 14 | 9.94 426 | 25 | 0.05 574 | 9.87 557 | 11 | 40 | 3 | 0.8 |
| 21 | 9.81 998 | 15 | 9.94 452 | 26 | 0.05 548 | 9.87 546 | 11 | 39 | 4 | 1.0 |
| 22 | 9.82 012 | 14 | 9.94 477 | 25 | 0.05 523 | 9.87 535 | 11 | 38 | 5 | 1.2 |
| 23 | 9.82 026 | 15 | 9.94 503 | 26 | 0.05 497 | 9.87 524 | 11 | 37 | 6 | 1.5 |
| 24 | 9.82 041 | 14 | 9.94 528 | 25 | 0.05 472 | 9.87 513 | 11 | 36 | 7 | 1.8 |
| 25 | 9.82 055 | 15 | 9.94 554 | 26 | 0.05 446 | 9.87 501 | 12 | 35 | 8 | 2.0 |
| 26 | 9.82 069 | 14 | 9.94 579 | 25 | 0.05 421 | 9.87 490 | 11 | 34 | 9 | 2.2 |
| 27 | 9.82 084 | 15 | 9.94 604 | 26 | 0.05 396 | 9.87 479 | 11 | 33 | 10 | 2.5 |
| 28 | 9.82 098 | 14 | 9.94 630 | 25 | 0.05 370 | 9.87 468 | 11 | 32 | 20 | 5.0 |
| 29 | 9.82 112 | 15 | 9.94 655 | 26 | 0.05 345 | 9.87 457 | 11 | 31 | 30 | 7.5 |
| 30 | 9.82 126 | 14 | 9.94 681 | 25 | 0.05 319 | 9.87 446 | 11 | 30 | 40 | 10.0 |
| 31 | 9.82 141 | 15 | 9.94 706 | 26 | 0.05 294 | 9.87 434 | 12 | 29 | 50 | 12.5 |
| 32 | 9.82 155 | 14 | 9.94 732 | 25 | 0.05 268 | 9.87 423 | 11 | 28 | | 11 |
| 33 | 9.82 169 | 15 | 9.94 757 | 26 | 0.05 243 | 9.87 412 | 11 | 27 | 1 | 0.2 |
| 34 | 9.82 184 | 14 | 9.94 783 | 25 | 0.05 217 | 9.87 401 | 11 | 26 | 2 | 0.4 |
| 35 | 9.82 198 | 15 | 9.94 808 | 26 | 0.05 192 | 9.87 390 | 11 | 25 | 3 | 0.6 |
| 36 | 9.82 212 | 14 | 9.94 834 | 25 | 0.05 166 | 9.87 378 | 12 | 24 | 4 | 0.8 |
| 37 | 9.82 226 | 15 | 9.94 859 | 26 | 0.05 141 | 9.87 367 | 11 | 23 | 5 | 1.0 |
| 38 | 9.82 240 | 14 | 9.94 884 | 25 | 0.05 116 | 9.87 356 | 11 | 22 | 6 | 1.2 |
| 39 | 9.82 255 | 15 | 9.94 910 | 26 | 0.05 090 | 9.87 345 | 11 | 21 | 7 | 1.4 |
| 40 | 9.82 269 | 14 | 9.94 935 | 25 | 0.05 065 | 9.87 334 | 11 | 20 | 8 | 1.6 |
| 41 | 9.82 283 | 15 | 9.94 961 | 26 | 0.05 039 | 9.87 322 | 12 | 19 | 9 | 1.8 |
| 42 | 9.82 297 | 14 | 9.94 986 | 25 | 0.05 014 | 9.87 311 | 11 | 18 | 10 | 2.0 |
| 43 | 9.82 311 | 15 | 9.95 012 | 26 | 0.04 988 | 9.87 300 | 11 | 17 | 20 | 4.0 |
| 44 | 9.82 326 | 14 | 9.95 037 | 25 | 0.04 963 | 9.87 288 | 12 | 16 | 30 | 6.0 |
| 45 | 9.82 340 | 15 | 9.95 062 | 26 | 0.04 938 | 9.87 277 | 11 | 15 | 40 | 8.0 |
| 46 | 9.82 354 | 14 | 9.95 088 | 25 | 0.04 912 | 9.87 266 | 11 | 14 | 50 | 10.0 |
| 47 | 9.82 368 | 15 | 9.95 113 | 26 | 0.04 887 | 9.87 255 | 11 | 13 | | |
| 48 | 9.82 382 | 14 | 9.95 139 | 25 | 0.04 861 | 9.87 243 | 12 | 12 | 12 | 11 |
| 49 | 9.82 396 | 15 | 9.95 164 | 26 | 0.04 836 | 9.87 232 | 11 | 11 | 0 | 1.1 |
| 50 | 9.82 410 | 14 | 9.95 190 | 25 | 0.04 810 | 9.87 221 | 11 | 10 | 1 | 3.2 |
| 51 | 9.82 424 | 15 | 9.95 215 | 26 | 0.04 785 | 9.87 209 | 12 | 9 | 2 | 5.4 |
| 52 | 9.82 439 | 14 | 9.95 240 | 25 | 0.04 760 | 9.87 198 | 11 | 8 | 3 | 7.6 |
| 53 | 9.82 453 | 15 | 9.95 266 | 26 | 0.04 734 | 9.87 187 | 11 | 7 | 4 | 9.8 |
| 54 | 9.82 467 | 14 | 9.95 291 | 25 | 0.04 709 | 9.87 175 | 12 | 6 | 5 | 11.9 |
| 55 | 9.82 481 | 15 | 9.95 317 | 26 | 0.04 683 | 9.87 164 | 11 | 5 | 6 | 14.1 |
| 56 | 9.82 495 | 14 | 9.95 342 | 25 | 0.04 658 | 9.87 153 | 11 | 4 | 7 | 16.2 |
| 57 | 9.82 509 | 15 | 9.95 368 | 26 | 0.04 632 | 9.87 141 | 12 | 3 | 8 | 18.4 |
| 58 | 9.82 523 | 14 | 9.95 393 | 25 | 0.04 607 | 9.87 130 | 11 | 2 | 9 | 20.6 |
| 59 | 9.82 537 | 15 | 9.95 418 | 26 | 0.04 582 | 9.87 119 | 11 | 1 | 10 | 22.8 |
| 60 | 9.82 551 | 14 | 9.95 444 | 25 | 0.04 556 | 9.87 107 | 12 | 0 | 11 | 24.9 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P | P |

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | | P | P |
|----|----------|----|----------|-----|----------|----------|----|----|----|------|
| 0 | 9.82 551 | | 9.95 444 | | 0.04 556 | 9.87 107 | | 60 | 26 | 25 |
| 1 | 9.82 505 | 14 | 9.95 409 | 25 | 0.04 531 | 9.87 096 | 11 | 59 | 1 | 0.4 |
| 2 | 9.82 579 | 14 | 9.95 495 | 20 | 0.04 505 | 9.87 085 | 11 | 58 | 2 | 0.9 |
| 3 | 9.82 593 | 14 | 9.95 520 | 25 | 0.04 480 | 9.87 073 | 12 | 57 | 3 | 1.3 |
| 4 | 9.82 607 | 14 | 9.95 545 | 26 | 0.04 455 | 9.87 062 | 12 | 56 | 4 | 1.7 |
| 5 | 9.82 621 | 14 | 9.95 571 | 25 | 0.04 429 | 9.87 050 | 11 | 55 | 5 | 2.2 |
| 6 | 9.82 635 | 14 | 9.95 596 | 20 | 0.04 404 | 9.87 039 | 11 | 54 | 6 | 2.6 |
| 7 | 9.82 649 | 14 | 9.95 622 | 25 | 0.04 378 | 9.87 028 | 12 | 53 | 7 | 3.0 |
| 8 | 9.82 663 | 14 | 9.95 647 | 25 | 0.04 353 | 9.87 016 | 11 | 52 | 8 | 3.5 |
| 9 | 9.82 677 | 14 | 9.95 672 | 20 | 0.04 328 | 9.87 005 | 12 | 51 | 9 | 3.9 |
| 10 | 9.82 691 | 14 | 9.95 698 | 25 | 0.04 302 | 9.86 993 | 11 | 50 | 10 | 4.3 |
| 11 | 9.82 705 | 14 | 9.95 723 | 25 | 0.04 277 | 9.86 982 | 12 | 49 | 20 | 8.7 |
| 12 | 9.82 719 | 14 | 9.95 748 | 20 | 0.04 252 | 9.86 970 | 11 | 48 | 30 | 13.0 |
| 13 | 9.82 733 | 14 | 9.95 774 | 25 | 0.04 226 | 9.86 959 | 12 | 47 | 40 | 17.3 |
| 14 | 9.82 747 | 14 | 9.95 799 | 26 | 0.04 201 | 9.86 947 | 11 | 46 | 50 | 21.7 |
| 15 | 9.82 761 | 14 | 9.95 825 | 25 | 0.04 175 | 9.86 936 | 12 | 45 | | |
| 16 | 9.82 775 | 13 | 9.95 850 | 25 | 0.04 150 | 9.86 924 | 11 | 44 | 14 | 13 |
| 17 | 9.82 788 | 14 | 9.95 875 | 26 | 0.04 125 | 9.86 913 | 11 | 43 | 1 | 0.2 |
| 18 | 9.82 802 | 14 | 9.95 901 | 20 | 0.04 099 | 9.86 902 | 12 | 42 | 2 | 0.5 |
| 19 | 9.82 816 | 14 | 9.95 926 | 25 | 0.04 074 | 9.86 890 | 11 | 41 | 3 | 0.7 |
| 20 | 9.82 830 | 14 | 9.95 952 | 26 | 0.04 048 | 9.86 879 | 12 | 40 | 4 | 0.9 |
| 21 | 9.82 844 | 14 | 9.95 977 | 25 | 0.04 023 | 9.86 867 | 11 | 39 | 5 | 1.2 |
| 22 | 9.82 858 | 14 | 9.96 002 | 20 | 0.03 998 | 9.86 855 | 12 | 38 | 6 | 1.4 |
| 23 | 9.82 872 | 13 | 9.96 028 | 25 | 0.03 972 | 9.86 844 | 11 | 37 | 7 | 1.6 |
| 24 | 9.82 885 | 14 | 9.96 053 | 26 | 0.03 947 | 9.86 832 | 12 | 36 | 8 | 1.9 |
| 25 | 9.82 899 | 14 | 9.96 078 | 25 | 0.03 922 | 9.86 821 | 11 | 35 | 9 | 2.1 |
| 26 | 9.82 913 | 14 | 9.96 104 | 20 | 0.03 896 | 9.86 809 | 12 | 34 | 10 | 2.3 |
| 27 | 9.82 927 | 14 | 9.96 129 | 26 | 0.03 871 | 9.86 798 | 11 | 33 | 20 | 4.7 |
| 28 | 9.82 941 | 14 | 9.96 155 | 25 | 0.03 845 | 9.86 786 | 12 | 32 | 30 | 7.0 |
| 29 | 9.82 955 | 13 | 9.96 180 | 25 | 0.03 820 | 9.86 775 | 11 | 31 | 40 | 9.3 |
| 30 | 9.82 968 | 14 | 9.96 205 | 26 | 0.03 795 | 9.86 763 | 12 | 30 | 50 | 11.7 |
| 31 | 9.82 982 | 14 | 9.96 231 | 20 | 0.03 769 | 9.86 752 | 11 | 29 | | |
| 32 | 9.82 996 | 14 | 9.96 256 | 25 | 0.03 744 | 9.86 740 | 12 | 28 | 12 | 11 |
| 33 | 9.83 010 | 13 | 9.96 281 | 26 | 0.03 719 | 9.86 728 | 11 | 27 | 1 | 0.2 |
| 34 | 9.83 023 | 14 | 9.96 307 | 25 | 0.03 693 | 9.86 717 | 12 | 26 | 2 | 0.4 |
| 35 | 9.83 037 | 14 | 9.96 332 | 20 | 0.03 668 | 9.86 705 | 11 | 25 | 3 | 0.6 |
| 36 | 9.83 051 | 14 | 9.96 357 | 25 | 0.03 643 | 9.86 694 | 12 | 24 | 4 | 0.8 |
| 37 | 9.83 065 | 13 | 9.96 383 | 26 | 0.03 617 | 9.86 682 | 11 | 23 | 5 | 1.0 |
| 38 | 9.83 078 | 14 | 9.96 408 | 25 | 0.03 592 | 9.86 670 | 12 | 22 | 6 | 1.2 |
| 39 | 9.83 092 | 14 | 9.96 433 | 20 | 0.03 567 | 9.86 659 | 11 | 21 | 7 | 1.4 |
| 40 | 9.83 106 | 14 | 9.96 459 | 25 | 0.03 541 | 9.86 647 | 12 | 20 | 8 | 1.6 |
| 41 | 9.83 120 | 14 | 9.96 484 | 26 | 0.03 516 | 9.86 635 | 11 | 19 | 9 | 1.8 |
| 42 | 9.83 133 | 13 | 9.96 510 | 25 | 0.03 490 | 9.86 624 | 12 | 18 | 10 | 2.0 |
| 43 | 9.83 147 | 14 | 9.96 535 | 20 | 0.03 465 | 9.86 612 | 11 | 17 | 20 | 4.0 |
| 44 | 9.83 161 | 14 | 9.96 560 | 25 | 0.03 440 | 9.86 600 | 12 | 16 | 30 | 6.0 |
| 45 | 9.83 174 | 13 | 9.96 586 | 26 | 0.03 414 | 9.86 589 | 11 | 15 | 40 | 8.0 |
| 46 | 9.83 188 | 14 | 9.96 611 | 25 | 0.03 389 | 9.86 577 | 12 | 14 | 50 | 10.0 |
| 47 | 9.83 202 | 14 | 9.96 636 | 20 | 0.03 364 | 9.86 565 | 11 | 13 | | |
| 48 | 9.83 215 | 13 | 9.96 662 | 25 | 0.03 338 | 9.86 554 | 12 | 12 | 12 | 11 |
| 49 | 9.83 229 | 14 | 9.96 687 | 26 | 0.03 313 | 9.86 542 | 11 | 11 | 26 | 26 |
| 50 | 9.83 242 | 13 | 9.96 712 | 25 | 0.03 288 | 9.86 530 | 12 | 10 | 11 | 25 |
| 51 | 9.83 256 | 14 | 9.96 738 | 20 | 0.03 262 | 9.86 518 | 11 | 9 | 1 | 1.1 |
| 52 | 9.83 270 | 14 | 9.96 763 | 25 | 0.03 237 | 9.86 507 | 12 | 8 | 2 | 3.2 |
| 53 | 9.83 283 | 13 | 9.96 788 | 26 | 0.03 212 | 9.86 495 | 11 | 7 | 3 | 3.5 |
| 54 | 9.83 297 | 14 | 9.96 814 | 25 | 0.03 186 | 9.86 483 | 12 | 6 | 4 | 5.0 |
| 55 | 9.83 310 | 13 | 9.96 839 | 20 | 0.03 161 | 9.86 472 | 11 | 5 | 5 | 5.9 |
| 56 | 9.83 324 | 14 | 9.96 864 | 25 | 0.03 136 | 9.86 460 | 12 | 4 | 6 | 7.0 |
| 57 | 9.83 338 | 14 | 9.96 890 | 26 | 0.03 110 | 9.86 448 | 11 | 3 | 7 | 8.3 |
| 58 | 9.83 351 | 13 | 9.96 915 | 25 | 0.03 085 | 9.86 436 | 12 | 2 | 8 | 10.6 |
| 59 | 9.83 365 | 14 | 9.96 940 | 20 | 0.03 060 | 9.86 425 | 11 | 1 | 9 | 13.0 |
| 60 | 9.83 378 | 13 | 9.96 966 | 25 | 0.03 034 | 9.86 413 | 12 | 0 | 10 | 15.4 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P | P |

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*133° 223° *313°

| | L Sin | d | L Tan | e d | L Cot | L Cos | d | P P | | |
|----|----------|----|----------|-----|----------|----------|----|-----|----|------|
| 0 | 9.83 378 | | 9.96 966 | | 0.03 034 | 9.86 413 | 12 | 60 | 26 | 25 |
| 1 | 9.83 392 | 14 | 9.96 991 | 25 | 0.03 009 | 9.86 401 | 12 | 59 | 1 | 0.4 |
| 2 | 9.83 405 | 13 | 9.97 016 | 25 | 0.02 984 | 9.86 389 | 12 | 58 | 2 | 0.9 |
| 3 | 9.83 419 | 14 | 9.97 042 | 26 | 0.02 958 | 9.86 377 | 12 | 57 | 3 | 1.3 |
| 4 | 9.83 432 | 13 | 9.97 067 | 25 | 0.02 933 | 9.86 366 | 12 | 56 | 4 | 1.7 |
| 5 | 9.83 446 | 14 | 9.97 092 | 25 | 0.02 908 | 9.86 354 | 12 | 55 | 5 | 2.2 |
| 6 | 9.83 459 | 13 | 9.97 118 | 26 | 0.02 882 | 9.86 342 | 12 | 54 | 6 | 2.6 |
| 7 | 9.83 473 | 14 | 9.97 143 | 25 | 0.02 857 | 9.86 330 | 12 | 53 | 7 | 3.0 |
| 8 | 9.83 486 | 13 | 9.97 168 | 25 | 0.02 832 | 9.86 318 | 12 | 52 | 8 | 3.5 |
| 9 | 9.83 500 | 14 | 9.97 193 | 25 | 0.02 807 | 9.86 306 | 12 | 51 | 9 | 3.9 |
| 10 | 9.83 513 | 13 | 9.97 219 | 26 | 0.02 781 | 9.86 295 | 12 | 50 | 10 | 4.3 |
| 11 | 9.83 527 | 14 | 9.97 244 | 25 | 0.02 756 | 9.86 283 | 12 | 49 | 20 | 8.7 |
| 12 | 9.83 540 | 13 | 9.97 269 | 25 | 0.02 731 | 9.86 271 | 12 | 48 | 30 | 13.0 |
| 13 | 9.83 554 | 14 | 9.97 295 | 26 | 0.02 705 | 9.86 259 | 12 | 47 | 40 | 17.3 |
| 14 | 9.83 567 | 13 | 9.97 320 | 25 | 0.02 680 | 9.86 247 | 12 | 46 | 50 | 21.7 |
| 15 | 9.83 581 | 14 | 9.97 345 | 25 | 0.02 655 | 9.86 235 | 12 | 45 | | 11 |
| 16 | 9.83 594 | 13 | 9.97 371 | 26 | 0.02 629 | 9.86 223 | 12 | 44 | | 13 |
| 17 | 9.83 608 | 14 | 9.97 396 | 25 | 0.02 604 | 9.86 211 | 12 | 43 | 1 | 0.2 |
| 18 | 9.83 621 | 13 | 9.97 421 | 25 | 0.02 579 | 9.86 200 | 12 | 42 | 2 | 0.5 |
| 19 | 9.83 634 | 14 | 9.97 447 | 26 | 0.02 553 | 9.86 188 | 12 | 41 | 3 | 0.7 |
| 20 | 9.83 648 | 13 | 9.97 472 | 25 | 0.02 528 | 9.86 176 | 12 | 40 | 4 | 0.9 |
| 21 | 9.83 661 | 14 | 9.97 497 | 25 | 0.02 503 | 9.86 164 | 12 | 39 | 5 | 1.2 |
| 22 | 9.83 674 | 13 | 9.97 523 | 26 | 0.02 477 | 9.86 152 | 12 | 38 | 6 | 1.4 |
| 23 | 9.83 688 | 14 | 9.97 548 | 25 | 0.02 452 | 9.86 140 | 12 | 37 | 7 | 1.6 |
| 24 | 9.83 701 | 13 | 9.97 573 | 25 | 0.02 427 | 9.86 128 | 12 | 36 | 8 | 1.9 |
| 25 | 9.83 715 | 14 | 9.97 598 | 26 | 0.02 402 | 9.86 116 | 12 | 35 | 9 | 2.1 |
| 26 | 9.83 728 | 13 | 9.97 624 | 25 | 0.02 376 | 9.86 104 | 12 | 34 | 10 | 2.3 |
| 27 | 9.83 741 | 14 | 9.97 649 | 25 | 0.02 351 | 9.86 092 | 12 | 33 | 20 | 4.7 |
| 28 | 9.83 755 | 13 | 9.97 674 | 25 | 0.02 326 | 9.86 080 | 12 | 32 | 30 | 7.0 |
| 29 | 9.83 768 | 14 | 9.97 700 | 26 | 0.02 300 | 9.86 068 | 12 | 31 | 40 | 9.3 |
| 30 | 9.83 781 | 13 | 9.97 725 | 25 | 0.02 275 | 9.86 056 | 12 | 30 | 50 | 11.7 |
| 31 | 9.83 795 | 14 | 9.97 750 | 25 | 0.02 250 | 9.86 044 | 12 | 29 | | 12 |
| 32 | 9.83 808 | 13 | 9.97 776 | 26 | 0.02 224 | 9.86 032 | 12 | 28 | 1 | 0.2 |
| 33 | 9.83 821 | 14 | 9.97 801 | 25 | 0.02 199 | 9.86 020 | 12 | 27 | 2 | 0.4 |
| 34 | 9.83 834 | 13 | 9.97 826 | 25 | 0.02 174 | 9.86 008 | 12 | 26 | 3 | 0.6 |
| 35 | 9.83 848 | 14 | 9.97 851 | 26 | 0.02 149 | 9.85 996 | 12 | 25 | 4 | 0.7 |
| 36 | 9.83 861 | 13 | 9.97 877 | 25 | 0.02 123 | 9.85 984 | 12 | 24 | 5 | 0.9 |
| 37 | 9.83 874 | 14 | 9.97 902 | 25 | 0.02 098 | 9.85 972 | 12 | 23 | 6 | 1.0 |
| 38 | 9.83 887 | 13 | 9.97 927 | 26 | 0.02 073 | 9.85 960 | 12 | 22 | 7 | 1.2 |
| 39 | 9.83 901 | 14 | 9.97 953 | 25 | 0.02 047 | 9.85 948 | 12 | 21 | 8 | 1.4 |
| 40 | 9.83 914 | 13 | 9.97 978 | 25 | 0.02 022 | 9.85 936 | 12 | 20 | 9 | 1.6 |
| 41 | 9.83 927 | 14 | 9.98 003 | 25 | 0.01 997 | 9.85 924 | 12 | 19 | 10 | 1.8 |
| 42 | 9.83 940 | 13 | 9.98 029 | 26 | 0.01 971 | 9.85 912 | 12 | 18 | 20 | 4.0 |
| 43 | 9.83 954 | 14 | 9.98 054 | 25 | 0.01 946 | 9.85 900 | 12 | 17 | 30 | 6.0 |
| 44 | 9.83 967 | 13 | 9.98 079 | 25 | 0.01 921 | 9.85 888 | 12 | 16 | 40 | 8.0 |
| 45 | 9.83 980 | 14 | 9.98 104 | 25 | 0.01 896 | 9.85 876 | 12 | 15 | 50 | 10.0 |
| 46 | 9.83 993 | 13 | 9.98 130 | 26 | 0.01 870 | 9.85 864 | 12 | 14 | | 13 |
| 47 | 9.84 006 | 14 | 9.98 155 | 25 | 0.01 845 | 9.85 851 | 12 | 13 | 0 | 26 |
| 48 | 9.84 020 | 13 | 9.98 180 | 25 | 0.01 820 | 9.85 839 | 12 | 12 | 1 | 25 |
| 49 | 9.84 033 | 14 | 9.98 206 | 26 | 0.01 794 | 9.85 827 | 12 | 11 | 2 | 1.0 |
| 50 | 9.84 046 | 13 | 9.98 231 | 25 | 0.01 769 | 9.85 815 | 12 | 10 | 3 | 4.8 |
| 51 | 9.84 059 | 14 | 9.98 256 | 25 | 0.01 744 | 9.85 803 | 12 | 9 | 4 | 5.2 |
| 52 | 9.84 072 | 13 | 9.98 281 | 26 | 0.01 719 | 9.85 791 | 12 | 8 | 5 | 7.3 |
| 53 | 9.84 085 | 14 | 9.98 307 | 25 | 0.01 693 | 9.85 779 | 12 | 7 | 6 | 9.4 |
| 54 | 9.84 098 | 13 | 9.98 332 | 25 | 0.01 668 | 9.85 766 | 12 | 6 | 7 | 10.6 |
| 55 | 9.84 112 | 14 | 9.98 357 | 26 | 0.01 643 | 9.85 754 | 12 | 5 | 8 | 12.5 |
| 56 | 9.84 125 | 13 | 9.98 383 | 25 | 0.01 617 | 9.85 742 | 12 | 4 | 9 | 14.4 |
| 57 | 9.84 138 | 14 | 9.98 408 | 25 | 0.01 592 | 9.85 730 | 12 | 3 | 10 | 16.3 |
| 58 | 9.84 151 | 13 | 9.98 433 | 25 | 0.01 567 | 9.85 718 | 12 | 2 | 11 | 17.7 |
| 59 | 9.84 164 | 14 | 9.98 458 | 26 | 0.01 542 | 9.85 706 | 12 | 1 | 12 | 19.8 |
| 60 | 9.84 177 | 13 | 9.98 484 | 25 | 0.01 516 | 9.85 693 | 12 | 0 | 13 | 21.9 |
| | L Cos | d | L Cot | e d | L Tan | L Sin | d | | P | P |

*136° 226° *316°

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| | L Sin | d | L Tan | c d | L Cot | L Cos | d | | P P |
|----|----------|----|----------|-----|----------|----------|----|----|-----|
| 0 | 0.84 177 | 13 | 9.98 484 | 25 | 0.01 516 | 9.85 693 | 12 | 60 | |
| 1 | 0.84 190 | 13 | 9.98 509 | 25 | 0.01 491 | 9.85 681 | 12 | 59 | |
| 2 | 0.84 203 | 13 | 9.98 534 | 25 | 0.01 466 | 9.85 669 | 12 | 58 | |
| 3 | 0.84 216 | 13 | 9.98 560 | 25 | 0.01 440 | 9.85 657 | 12 | 57 | |
| 4 | 0.84 229 | 13 | 9.98 585 | 25 | 0.01 415 | 9.85 645 | 12 | 56 | |
| 5 | 0.84 242 | 13 | 9.98 610 | 25 | 0.01 390 | 9.85 632 | 13 | 55 | |
| 6 | 0.84 255 | 13 | 9.98 635 | 25 | 0.01 365 | 9.85 620 | 12 | 54 | |
| 7 | 0.84 269 | 13 | 9.98 661 | 25 | 0.01 339 | 9.85 608 | 12 | 53 | |
| 8 | 0.84 282 | 13 | 9.98 686 | 25 | 0.01 314 | 9.85 596 | 12 | 52 | |
| 9 | 0.84 295 | 13 | 9.98 711 | 25 | 0.01 289 | 9.85 583 | 13 | 51 | |
| 10 | 0.84 308 | 13 | 9.98 737 | 25 | 0.01 263 | 9.85 571 | 12 | 50 | |
| 11 | 0.84 321 | 13 | 9.98 762 | 25 | 0.01 238 | 9.85 559 | 12 | 49 | |
| 12 | 0.84 334 | 13 | 9.98 787 | 25 | 0.01 213 | 9.85 547 | 12 | 48 | |
| 13 | 0.84 347 | 13 | 9.98 812 | 25 | 0.01 188 | 9.85 534 | 13 | 47 | |
| 14 | 0.84 360 | 13 | 9.98 838 | 25 | 0.01 162 | 9.85 522 | 12 | 46 | |
| 15 | 0.84 373 | 13 | 9.98 863 | 25 | 0.01 137 | 9.85 510 | 12 | 45 | |
| 16 | 0.84 385 | 13 | 9.98 888 | 25 | 0.01 112 | 9.85 497 | 13 | 44 | |
| 17 | 0.84 398 | 13 | 9.98 913 | 25 | 0.01 087 | 9.85 485 | 12 | 43 | |
| 18 | 0.84 411 | 13 | 9.98 939 | 25 | 0.01 061 | 9.85 473 | 12 | 42 | |
| 19 | 0.84 424 | 13 | 9.98 964 | 25 | 0.01 036 | 9.85 460 | 13 | 41 | |
| 20 | 0.84 437 | 13 | 9.98 989 | 25 | 0.01 011 | 9.85 448 | 12 | 40 | |
| 21 | 0.84 450 | 13 | 9.99 015 | 25 | 0.00 985 | 9.85 436 | 12 | 39 | |
| 22 | 0.84 463 | 13 | 9.99 040 | 25 | 0.00 960 | 9.85 423 | 13 | 38 | |
| 23 | 0.84 476 | 13 | 9.99 065 | 25 | 0.00 935 | 9.85 411 | 12 | 37 | |
| 24 | 0.84 489 | 13 | 9.99 090 | 25 | 0.00 910 | 9.85 399 | 13 | 36 | |
| 25 | 0.84 502 | 13 | 9.99 116 | 25 | 0.00 884 | 9.85 386 | 13 | 35 | |
| 26 | 0.84 515 | 13 | 9.99 141 | 25 | 0.00 859 | 9.85 374 | 12 | 34 | |
| 27 | 0.84 528 | 12 | 9.99 166 | 25 | 0.00 834 | 9.85 361 | 12 | 33 | |
| 28 | 0.84 540 | 12 | 9.99 191 | 25 | 0.00 809 | 9.85 349 | 12 | 32 | |
| 29 | 0.84 553 | 13 | 9.99 217 | 25 | 0.00 783 | 9.85 337 | 12 | 31 | |
| 30 | 0.84 566 | 13 | 9.99 242 | 25 | 0.00 758 | 9.85 324 | 13 | 30 | |
| 31 | 0.84 579 | 13 | 9.99 267 | 25 | 0.00 733 | 9.85 312 | 12 | 29 | |
| 32 | 0.84 592 | 13 | 9.99 293 | 25 | 0.00 707 | 9.85 299 | 13 | 28 | |
| 33 | 0.84 605 | 13 | 9.99 318 | 25 | 0.00 682 | 9.85 287 | 12 | 27 | |
| 34 | 0.84 618 | 12 | 9.99 343 | 25 | 0.00 657 | 9.85 274 | 13 | 26 | |
| 35 | 0.84 630 | 12 | 9.99 368 | 25 | 0.00 632 | 9.85 262 | 12 | 25 | |
| 36 | 0.84 643 | 13 | 9.99 394 | 25 | 0.00 606 | 9.85 250 | 12 | 24 | |
| 37 | 0.84 656 | 13 | 9.99 419 | 25 | 0.00 581 | 9.85 237 | 13 | 23 | |
| 38 | 0.84 669 | 13 | 9.99 444 | 25 | 0.00 556 | 9.85 225 | 12 | 22 | |
| 39 | 0.84 682 | 12 | 9.99 469 | 25 | 0.00 531 | 9.85 212 | 13 | 21 | |
| 40 | 0.84 694 | 13 | 9.99 495 | 25 | 0.00 505 | 9.85 200 | 12 | 20 | |
| 41 | 0.84 707 | 13 | 9.99 520 | 25 | 0.00 480 | 9.85 187 | 13 | 19 | |
| 42 | 0.84 720 | 13 | 9.99 545 | 25 | 0.00 455 | 9.85 175 | 12 | 18 | |
| 43 | 0.84 733 | 12 | 9.99 570 | 25 | 0.00 430 | 9.85 162 | 13 | 17 | |
| 44 | 0.84 745 | 13 | 9.99 596 | 25 | 0.00 404 | 9.85 150 | 12 | 16 | |
| 45 | 0.84 758 | 13 | 9.99 621 | 25 | 0.00 379 | 9.85 137 | 13 | 15 | |
| 46 | 0.84 771 | 13 | 9.99 646 | 25 | 0.00 354 | 9.85 125 | 12 | 14 | |
| 47 | 0.84 784 | 12 | 9.99 672 | 25 | 0.00 328 | 9.85 112 | 13 | 13 | |
| 48 | 0.84 796 | 12 | 9.99 697 | 25 | 0.00 303 | 9.85 100 | 12 | 12 | |
| 49 | 0.84 809 | 13 | 9.99 722 | 25 | 0.00 278 | 9.85 087 | 13 | 11 | |
| 50 | 0.84 822 | 13 | 9.99 747 | 25 | 0.00 253 | 9.85 074 | 12 | 10 | |
| 51 | 0.84 835 | 12 | 9.99 773 | 25 | 0.00 227 | 9.85 062 | 13 | 9 | |
| 52 | 0.84 847 | 12 | 9.99 798 | 25 | 0.00 202 | 9.85 049 | 12 | 8 | |
| 53 | 0.84 860 | 13 | 9.99 823 | 25 | 0.00 177 | 9.85 037 | 13 | 7 | |
| 54 | 0.84 873 | 12 | 9.99 848 | 25 | 0.00 152 | 9.85 024 | 12 | 6 | |
| 55 | 0.84 885 | 12 | 9.99 874 | 25 | 0.00 126 | 9.85 012 | 13 | 5 | |
| 56 | 0.84 898 | 13 | 9.99 899 | 25 | 0.00 101 | 9.84 999 | 12 | 4 | |
| 57 | 0.84 911 | 12 | 9.99 924 | 25 | 0.00 076 | 9.84 986 | 13 | 3 | |
| 58 | 0.84 923 | 12 | 9.99 949 | 25 | 0.00 051 | 9.84 974 | 12 | 2 | |
| 59 | 0.84 936 | 13 | 9.99 975 | 25 | 0.00 025 | 9.84 961 | 13 | 1 | |
| 60 | 0.84 949 | 13 | 0.00 000 | 25 | 0.00 000 | 9.84 949 | 12 | 0 | |
| | L Cos | d | L Cot | c d | L Tan | L Sin | d | | P P |

V

TABLE OF THE NATURAL
TRIGONOMETRIC FUNCTIONS
FROM MINUTE TO MINUTE.

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0000 | 0.0000 | ∞ | 1.0000 | 60 |
| 1 | 0.0003 | 0.0003 | 3437.75 | 1.0000 | 59 |
| 2 | 0.0006 | 0.0006 | 1718.87 | 1.0000 | 58 |
| 3 | 0.0009 | 0.0009 | 1145.92 | 1.0000 | 57 |
| 4 | 0.0012 | 0.0012 | 859.436 | 1.0000 | 56 |
| 5 | 0.0015 | 0.0015 | 687.549 | 1.0000 | 55 |
| 6 | 0.0017 | 0.0017 | 572.957 | 1.0000 | 54 |
| 7 | 0.0020 | 0.0020 | 491.106 | 1.0000 | 53 |
| 8 | 0.0023 | 0.0023 | 429.718 | 1.0000 | 52 |
| 9 | 0.0026 | 0.0026 | 381.971 | 1.0000 | 51 |
| 10 | 0.0029 | 0.0029 | 343.774 | 1.0000 | 50 |
| 11 | 0.0032 | 0.0032 | 312.521 | 1.0000 | 49 |
| 12 | 0.0035 | 0.0035 | 286.478 | 1.0000 | 48 |
| 13 | 0.0038 | 0.0038 | 264.441 | 1.0000 | 47 |
| 14 | 0.0041 | 0.0041 | 245.552 | 1.0000 | 46 |
| 15 | 0.0044 | 0.0044 | 229.182 | 1.0000 | 45 |
| 16 | 0.0047 | 0.0047 | 214.858 | 1.0000 | 44 |
| 17 | 0.0049 | 0.0049 | 202.219 | 1.0000 | 43 |
| 18 | 0.0052 | 0.0052 | 190.984 | 1.0000 | 42 |
| 19 | 0.0055 | 0.0055 | 180.932 | 1.0000 | 41 |
| 20 | 0.0058 | 0.0058 | 171.885 | 1.0000 | 40 |
| 21 | 0.0061 | 0.0061 | 163.700 | 1.0000 | 39 |
| 22 | 0.0064 | 0.0064 | 156.259 | 1.0000 | 38 |
| 23 | 0.0067 | 0.0067 | 149.465 | 1.0000 | 37 |
| 24 | 0.0070 | 0.0070 | 143.237 | 1.0000 | 36 |
| 25 | 0.0073 | 0.0073 | 137.507 | 1.0000 | 35 |
| 26 | 0.0076 | 0.0076 | 132.219 | 1.0000 | 34 |
| 27 | 0.0079 | 0.0079 | 127.321 | 1.0000 | 33 |
| 28 | 0.0081 | 0.0081 | 122.774 | 1.0000 | 32 |
| 29 | 0.0084 | 0.0084 | 118.540 | 1.0000 | 31 |
| 30 | 0.0087 | 0.0087 | 114.589 | 1.0000 | 30 |
| 31 | 0.0090 | 0.0090 | 110.892 | 1.0000 | 29 |
| 32 | 0.0093 | 0.0093 | 107.426 | 1.0000 | 28 |
| 33 | 0.0096 | 0.0096 | 104.171 | 1.0000 | 27 |
| 34 | 0.0099 | 0.0099 | 101.109 | 1.0000 | 26 |
| 35 | 0.0102 | 0.0102 | 98.2179 | 0.9999 | 25 |
| 36 | 0.0105 | 0.0105 | 95.4895 | 0.9999 | 24 |
| 37 | 0.0108 | 0.0108 | 92.9085 | 0.9999 | 23 |
| 38 | 0.0111 | 0.0111 | 90.4633 | 0.9999 | 22 |
| 39 | 0.0113 | 0.0113 | 88.1436 | 0.9999 | 21 |
| 40 | 0.0116 | 0.0116 | 85.9398 | 0.9999 | 20 |
| 41 | 0.0119 | 0.0119 | 83.8455 | 0.9999 | 19 |
| 42 | 0.0122 | 0.0122 | 81.8479 | 0.9999 | 18 |
| 43 | 0.0125 | 0.0125 | 79.9434 | 0.9999 | 17 |
| 44 | 0.0128 | 0.0128 | 78.1263 | 0.9999 | 16 |
| 45 | 0.0131 | 0.0131 | 76.3990 | 0.9999 | 15 |
| 46 | 0.0134 | 0.0134 | 74.7292 | 0.9999 | 14 |
| 47 | 0.0137 | 0.0137 | 73.1399 | 0.9999 | 13 |
| 48 | 0.0140 | 0.0140 | 71.6151 | 0.9999 | 12 |
| 49 | 0.0143 | 0.0143 | 70.1533 | 0.9999 | 11 |
| 50 | 0.0145 | 0.0145 | 68.7501 | 0.9999 | 10 |
| 51 | 0.0148 | 0.0148 | 67.4019 | 0.9999 | 9 |
| 52 | 0.0151 | 0.0151 | 66.1055 | 0.9999 | 8 |
| 53 | 0.0154 | 0.0154 | 64.8580 | 0.9999 | 7 |
| 54 | 0.0157 | 0.0157 | 63.6567 | 0.9999 | 6 |
| 55 | 0.0160 | 0.0160 | 62.4992 | 0.9999 | 5 |
| 56 | 0.0163 | 0.0163 | 61.3829 | 0.9999 | 4 |
| 57 | 0.0166 | 0.0166 | 60.3058 | 0.9999 | 3 |
| 58 | 0.0169 | 0.0169 | 59.2659 | 0.9999 | 2 |
| 59 | 0.0172 | 0.0172 | 58.2612 | 0.9999 | 1 |
| 60 | 0.0175 | 0.0175 | 57.2900 | 0.9998 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0175 | 0.0175 | 57.2900 | 0.9998 | 60 |
| 1 | 0.0177 | 0.0177 | 56.3566 | 0.9998 | 59 |
| 2 | 0.0180 | 0.0180 | 55.4415 | 0.9998 | 58 |
| 3 | 0.0183 | 0.0183 | 54.5613 | 0.9998 | 57 |
| 4 | 0.0186 | 0.0186 | 53.7086 | 0.9998 | 56 |
| 5 | 0.0189 | 0.0189 | 52.8821 | 0.9998 | 55 |
| 6 | 0.0192 | 0.0192 | 52.0807 | 0.9998 | 54 |
| 7 | 0.0195 | 0.0195 | 51.3032 | 0.9998 | 53 |
| 8 | 0.0198 | 0.0198 | 50.5485 | 0.9998 | 52 |
| 9 | 0.0201 | 0.0201 | 49.8157 | 0.9998 | 51 |
| 10 | 0.0204 | 0.0204 | 49.1039 | 0.9998 | 50 |
| 11 | 0.0207 | 0.0207 | 48.4121 | 0.9998 | 49 |
| 12 | 0.0209 | 0.0209 | 47.7395 | 0.9998 | 48 |
| 13 | 0.0212 | 0.0212 | 47.0853 | 0.9998 | 47 |
| 14 | 0.0215 | 0.0215 | 46.4489 | 0.9998 | 46 |
| 15 | 0.0218 | 0.0218 | 45.8294 | 0.9998 | 45 |
| 16 | 0.0221 | 0.0221 | 45.2261 | 0.9998 | 44 |
| 17 | 0.0224 | 0.0224 | 44.6386 | 0.9997 | 43 |
| 18 | 0.0227 | 0.0227 | 44.0661 | 0.9997 | 42 |
| 19 | 0.0230 | 0.0230 | 43.5081 | 0.9997 | 41 |
| 20 | 0.0233 | 0.0233 | 42.9641 | 0.9997 | 40 |
| 21 | 0.0236 | 0.0236 | 42.4335 | 0.9997 | 39 |
| 22 | 0.0239 | 0.0239 | 41.9158 | 0.9997 | 38 |
| 23 | 0.0241 | 0.0241 | 41.4106 | 0.9997 | 37 |
| 24 | 0.0244 | 0.0244 | 40.9174 | 0.9997 | 36 |
| 25 | 0.0247 | 0.0247 | 40.4358 | 0.9997 | 35 |
| 26 | 0.0250 | 0.0250 | 39.9655 | 0.9997 | 34 |
| 27 | 0.0253 | 0.0253 | 39.5059 | 0.9997 | 33 |
| 28 | 0.0256 | 0.0256 | 39.0568 | 0.9997 | 32 |
| 29 | 0.0259 | 0.0259 | 38.6177 | 0.9997 | 31 |
| 30 | 0.0262 | 0.0262 | 38.1885 | 0.9997 | 30 |
| 31 | 0.0265 | 0.0265 | 37.7686 | 0.9996 | 29 |
| 32 | 0.0268 | 0.0268 | 37.3579 | 0.9996 | 28 |
| 33 | 0.0270 | 0.0271 | 36.9560 | 0.9996 | 27 |
| 34 | 0.0273 | 0.0274 | 36.5627 | 0.9996 | 26 |
| 35 | 0.0276 | 0.0276 | 36.1776 | 0.9996 | 25 |
| 36 | 0.0279 | 0.0279 | 35.8006 | 0.9996 | 24 |
| 37 | 0.0282 | 0.0282 | 35.4313 | 0.9996 | 23 |
| 38 | 0.0285 | 0.0285 | 35.0695 | 0.9996 | 22 |
| 39 | 0.0288 | 0.0288 | 34.7151 | 0.9996 | 21 |
| 40 | 0.0291 | 0.0291 | 34.3678 | 0.9996 | 20 |
| 41 | 0.0294 | 0.0294 | 34.0273 | 0.9996 | 19 |
| 42 | 0.0297 | 0.0297 | 33.6935 | 0.9996 | 18 |
| 43 | 0.0300 | 0.0300 | 33.3662 | 0.9996 | 17 |
| 44 | 0.0302 | 0.0303 | 33.0452 | 0.9995 | 16 |
| 45 | 0.0305 | 0.0306 | 32.7303 | 0.9995 | 15 |
| 46 | 0.0308 | 0.0308 | 32.4213 | 0.9995 | 14 |
| 47 | 0.0311 | 0.0311 | 32.1181 | 0.9995 | 13 |
| 48 | 0.0314 | 0.0314 | 31.8205 | 0.9995 | 12 |
| 49 | 0.0317 | 0.0317 | 31.5284 | 0.9995 | 11 |
| 50 | 0.0320 | 0.0320 | 31.2416 | 0.9995 | 10 |
| 51 | 0.0323 | 0.0323 | 30.9599 | 0.9995 | 9 |
| 52 | 0.0326 | 0.0326 | 30.6833 | 0.9995 | 8 |
| 53 | 0.0329 | 0.0329 | 30.4116 | 0.9995 | 7 |
| 54 | 0.0332 | 0.0332 | 30.1446 | 0.9995 | 6 |
| 55 | 0.0334 | 0.0335 | 29.8823 | 0.9994 | 5 |
| 56 | 0.0337 | 0.0338 | 29.6245 | 0.9994 | 4 |
| 57 | 0.0340 | 0.0340 | 29.3711 | 0.9994 | 3 |
| 58 | 0.0343 | 0.0343 | 29.1220 | 0.9994 | 2 |
| 59 | 0.0346 | 0.0346 | 28.8771 | 0.9994 | 1 |
| 60 | 0.0349 | 0.0349 | 28.6363 | 0.9994 | 0 |
| | Cos | Cot | Tan | Sin | |

*92° 182° *272°

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NATURAL

3°

*93° 183° *273°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0340 | 0.0340 | 28.6363 | 0.9994 | 60 |
| 1 | 0.0352 | 0.0352 | 28.3904 | 0.9994 | 59 |
| 2 | 0.0355 | 0.0355 | 28.1664 | 0.9994 | 58 |
| 3 | 0.0358 | 0.0358 | 27.9372 | 0.9994 | 57 |
| 4 | 0.0361 | 0.0361 | 27.7117 | 0.9993 | 56 |
| 5 | 0.0364 | 0.0364 | 27.4899 | 0.9993 | 55 |
| 6 | 0.0366 | 0.0367 | 27.2715 | 0.9993 | 54 |
| 7 | 0.0369 | 0.0370 | 27.0566 | 0.9993 | 53 |
| 8 | 0.0372 | 0.0373 | 26.8450 | 0.9993 | 52 |
| 9 | 0.0375 | 0.0375 | 26.6367 | 0.9993 | 51 |
| 10 | 0.0378 | 0.0378 | 26.4316 | 0.9993 | 50 |
| 11 | 0.0381 | 0.0381 | 26.2296 | 0.9993 | 49 |
| 12 | 0.0384 | 0.0384 | 26.0307 | 0.9993 | 48 |
| 13 | 0.0387 | 0.0387 | 25.8348 | 0.9993 | 47 |
| 14 | 0.0390 | 0.0390 | 25.6418 | 0.9992 | 46 |
| 15 | 0.0393 | 0.0393 | 25.4517 | 0.9992 | 45 |
| 16 | 0.0396 | 0.0396 | 25.2644 | 0.9992 | 44 |
| 17 | 0.0398 | 0.0399 | 25.0798 | 0.9992 | 43 |
| 18 | 0.0401 | 0.0402 | 24.8978 | 0.9992 | 42 |
| 19 | 0.0404 | 0.0405 | 24.7185 | 0.9992 | 41 |
| 20 | 0.0407 | 0.0407 | 24.5418 | 0.9992 | 40 |
| 21 | 0.0410 | 0.0410 | 24.3675 | 0.9992 | 39 |
| 22 | 0.0413 | 0.0413 | 24.1957 | 0.9991 | 38 |
| 23 | 0.0416 | 0.0416 | 24.0263 | 0.9991 | 37 |
| 24 | 0.0419 | 0.0419 | 23.8593 | 0.9991 | 36 |
| 25 | 0.0422 | 0.0422 | 23.6945 | 0.9991 | 35 |
| 26 | 0.0425 | 0.0425 | 23.5321 | 0.9991 | 34 |
| 27 | 0.0427 | 0.0428 | 23.3718 | 0.9991 | 33 |
| 28 | 0.0430 | 0.0431 | 23.2137 | 0.9991 | 32 |
| 29 | 0.0433 | 0.0434 | 23.0577 | 0.9991 | 31 |
| 30 | 0.0436 | 0.0437 | 22.9038 | 0.9990 | 30 |
| 31 | 0.0439 | 0.0440 | 22.7519 | 0.9990 | 29 |
| 32 | 0.0442 | 0.0442 | 22.6020 | 0.9990 | 28 |
| 33 | 0.0445 | 0.0445 | 22.4541 | 0.9990 | 27 |
| 34 | 0.0448 | 0.0448 | 22.3081 | 0.9990 | 26 |
| 35 | 0.0451 | 0.0451 | 22.1640 | 0.9990 | 25 |
| 36 | 0.0454 | 0.0454 | 22.0217 | 0.9990 | 24 |
| 37 | 0.0457 | 0.0457 | 21.8813 | 0.9990 | 23 |
| 38 | 0.0459 | 0.0460 | 21.7426 | 0.9989 | 22 |
| 39 | 0.0462 | 0.0463 | 21.6056 | 0.9989 | 21 |
| 40 | 0.0465 | 0.0466 | 21.4704 | 0.9989 | 20 |
| 41 | 0.0468 | 0.0469 | 21.3369 | 0.9989 | 19 |
| 42 | 0.0471 | 0.0472 | 21.2049 | 0.9989 | 18 |
| 43 | 0.0474 | 0.0475 | 21.0747 | 0.9989 | 17 |
| 44 | 0.0477 | 0.0477 | 20.9460 | 0.9989 | 16 |
| 45 | 0.0480 | 0.0480 | 20.8188 | 0.9988 | 15 |
| 46 | 0.0483 | 0.0483 | 20.6932 | 0.9988 | 14 |
| 47 | 0.0486 | 0.0486 | 20.5691 | 0.9988 | 13 |
| 48 | 0.0488 | 0.0489 | 20.4465 | 0.9988 | 12 |
| 49 | 0.0491 | 0.0492 | 20.3253 | 0.9988 | 11 |
| 50 | 0.0494 | 0.0495 | 20.2056 | 0.9988 | 10 |
| 51 | 0.0497 | 0.0498 | 20.0872 | 0.9988 | 9 |
| 52 | 0.0500 | 0.0501 | 19.9702 | 0.9987 | 8 |
| 53 | 0.0503 | 0.0504 | 19.8546 | 0.9987 | 7 |
| 54 | 0.0506 | 0.0507 | 19.7403 | 0.9987 | 6 |
| 55 | 0.0509 | 0.0509 | 19.6273 | 0.9987 | 5 |
| 56 | 0.0512 | 0.0512 | 19.5156 | 0.9987 | 4 |
| 57 | 0.0515 | 0.0515 | 19.4051 | 0.9987 | 3 |
| 58 | 0.0518 | 0.0518 | 19.2959 | 0.9987 | 2 |
| 59 | 0.0520 | 0.0521 | 19.1879 | 0.9986 | 1 |
| 60 | 0.0523 | 0.0524 | 19.0811 | 0.9986 | 0 |
| | Cos | Cot | Tan | Sin | |

*177° 267° *357°

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NATURAL

86°

*176° 266° *356°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0523 | 0.0524 | 19.0811 | 0.9986 | 60 |
| 1 | 0.0526 | 0.0527 | 18.9755 | 0.9986 | 59 |
| 2 | 0.0529 | 0.0530 | 18.8711 | 0.9986 | 58 |
| 3 | 0.0532 | 0.0533 | 18.7678 | 0.9986 | 57 |
| 4 | 0.0535 | 0.0536 | 18.6656 | 0.9986 | 56 |
| 5 | 0.0538 | 0.0539 | 18.5645 | 0.9986 | 55 |
| 6 | 0.0541 | 0.0542 | 18.4645 | 0.9985 | 54 |
| 7 | 0.0544 | 0.0544 | 18.3655 | 0.9985 | 53 |
| 8 | 0.0547 | 0.0547 | 18.2677 | 0.9985 | 52 |
| 9 | 0.0550 | 0.0550 | 18.1708 | 0.9985 | 51 |
| 10 | 0.0552 | 0.0553 | 18.0750 | 0.9985 | 50 |
| 11 | 0.0555 | 0.0556 | 17.9802 | 0.9985 | 49 |
| 12 | 0.0558 | 0.0559 | 17.8863 | 0.9984 | 48 |
| 13 | 0.0561 | 0.0562 | 17.7934 | 0.9984 | 47 |
| 14 | 0.0564 | 0.0565 | 17.7015 | 0.9984 | 46 |
| 15 | 0.0567 | 0.0568 | 17.6106 | 0.9984 | 45 |
| 16 | 0.0570 | 0.0571 | 17.5205 | 0.9984 | 44 |
| 17 | 0.0573 | 0.0574 | 17.4314 | 0.9984 | 43 |
| 18 | 0.0576 | 0.0577 | 17.3432 | 0.9983 | 42 |
| 19 | 0.0579 | 0.0580 | 17.2558 | 0.9983 | 41 |
| 20 | 0.0581 | 0.0582 | 17.1693 | 0.9983 | 40 |
| 21 | 0.0584 | 0.0585 | 17.0837 | 0.9983 | 39 |
| 22 | 0.0587 | 0.0588 | 16.9990 | 0.9983 | 38 |
| 23 | 0.0590 | 0.0591 | 16.9150 | 0.9983 | 37 |
| 24 | 0.0593 | 0.0594 | 16.8319 | 0.9982 | 36 |
| 25 | 0.0596 | 0.0597 | 16.7496 | 0.9982 | 35 |
| 26 | 0.0599 | 0.0600 | 16.6681 | 0.9982 | 34 |
| 27 | 0.0602 | 0.0603 | 16.5874 | 0.9982 | 33 |
| 28 | 0.0605 | 0.0606 | 16.5075 | 0.9982 | 32 |
| 29 | 0.0608 | 0.0609 | 16.4283 | 0.9982 | 31 |
| 30 | 0.0610 | 0.0612 | 16.3499 | 0.9981 | 30 |
| 31 | 0.0613 | 0.0615 | 16.2722 | 0.9981 | 29 |
| 32 | 0.0616 | 0.0617 | 16.1952 | 0.9981 | 28 |
| 33 | 0.0619 | 0.0620 | 16.1190 | 0.9981 | 27 |
| 34 | 0.0622 | 0.0623 | 16.0435 | 0.9981 | 26 |
| 35 | 0.0625 | 0.0626 | 15.9687 | 0.9980 | 25 |
| 36 | 0.0628 | 0.0629 | 15.8945 | 0.9980 | 24 |
| 37 | 0.0631 | 0.0632 | 15.8211 | 0.9980 | 23 |
| 38 | 0.0634 | 0.0635 | 15.7483 | 0.9980 | 22 |
| 39 | 0.0637 | 0.0638 | 15.6762 | 0.9980 | 21 |
| 40 | 0.0640 | 0.0641 | 15.6048 | 0.9980 | 20 |
| 41 | 0.0642 | 0.0644 | 15.5340 | 0.9979 | 19 |
| 42 | 0.0645 | 0.0647 | 15.4638 | 0.9979 | 18 |
| 43 | 0.0648 | 0.0650 | 15.3943 | 0.9979 | 17 |
| 44 | 0.0651 | 0.0653 | 15.3254 | 0.9979 | 16 |
| 45 | 0.0654 | 0.0655 | 15.2571 | 0.9979 | 15 |
| 46 | 0.0657 | 0.0658 | 15.1893 | 0.9978 | 14 |
| 47 | 0.0660 | 0.0661 | 15.1222 | 0.9978 | 13 |
| 48 | 0.0663 | 0.0664 | 15.0557 | 0.9978 | 12 |
| 49 | 0.0666 | 0.0667 | 14.9898 | 0.9978 | 11 |
| 50 | 0.0669 | 0.0670 | 14.9244 | 0.9978 | 10 |
| 51 | 0.0671 | 0.0673 | 14.8596 | 0.9977 | 9 |
| 52 | 0.0674 | 0.0676 | 14.7954 | 0.9977 | 8 |
| 53 | 0.0677 | 0.0679 | 14.7317 | 0.9977 | 7 |
| 54 | 0.0680 | 0.0682 | 14.6685 | 0.9977 | 6 |
| 55 | 0.0683 | 0.0685 | 14.6059 | 0.9977 | 5 |
| 56 | 0.0686 | 0.0688 | 14.5438 | 0.9976 | 4 |
| 57 | 0.0689 | 0.0690 | 14.4823 | 0.9976 | 3 |
| 58 | 0.0692 | 0.0693 | 14.4212 | 0.9976 | 2 |
| 59 | 0.0695 | 0.0696 | 14.3607 | 0.9976 | 1 |
| 60 | 0.0698 | 0.0699 | 14.3007 | 0.9976 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0698 | 0.0699 | 14.3007 | 0.9976 | 60 |
| 1 | 0.0700 | 0.0702 | 14.2411 | 0.9975 | 59 |
| 2 | 0.0703 | 0.0705 | 14.1821 | 0.9975 | 58 |
| 3 | 0.0706 | 0.0708 | 14.1235 | 0.9975 | 57 |
| 4 | 0.0709 | 0.0711 | 14.0655 | 0.9975 | 56 |
| 5 | 0.0712 | 0.0714 | 14.0079 | 0.9975 | 55 |
| 6 | 0.0715 | 0.0717 | 13.9507 | 0.9974 | 54 |
| 7 | 0.0718 | 0.0720 | 13.8940 | 0.9974 | 53 |
| 8 | 0.0721 | 0.0723 | 13.8378 | 0.9974 | 52 |
| 9 | 0.0724 | 0.0726 | 13.7821 | 0.9974 | 51 |
| 10 | 0.0727 | 0.0729 | 13.7267 | 0.9974 | 50 |
| 11 | 0.0729 | 0.0731 | 13.6719 | 0.9973 | 49 |
| 12 | 0.0732 | 0.0734 | 13.6174 | 0.9973 | 48 |
| 13 | 0.0735 | 0.0737 | 13.5634 | 0.9973 | 47 |
| 14 | 0.0738 | 0.0740 | 13.5098 | 0.9973 | 46 |
| 15 | 0.0741 | 0.0743 | 13.4566 | 0.9973 | 45 |
| 16 | 0.0744 | 0.0746 | 13.4039 | 0.9972 | 44 |
| 17 | 0.0747 | 0.0749 | 13.3515 | 0.9972 | 43 |
| 18 | 0.0750 | 0.0752 | 13.2996 | 0.9972 | 42 |
| 19 | 0.0753 | 0.0755 | 13.2480 | 0.9972 | 41 |
| 20 | 0.0756 | 0.0758 | 13.1969 | 0.9971 | 40 |
| 21 | 0.0758 | 0.0761 | 13.1461 | 0.9971 | 39 |
| 22 | 0.0761 | 0.0764 | 13.0958 | 0.9971 | 38 |
| 23 | 0.0764 | 0.0767 | 13.0458 | 0.9971 | 37 |
| 24 | 0.0767 | 0.0769 | 12.9962 | 0.9971 | 36 |
| 25 | 0.0770 | 0.0772 | 12.9469 | 0.9970 | 35 |
| 26 | 0.0773 | 0.0775 | 12.8981 | 0.9970 | 34 |
| 27 | 0.0776 | 0.0778 | 12.8496 | 0.9970 | 33 |
| 28 | 0.0779 | 0.0781 | 12.8014 | 0.9970 | 32 |
| 29 | 0.0782 | 0.0784 | 12.7536 | 0.9969 | 31 |
| 30 | 0.0785 | 0.0787 | 12.7062 | 0.9969 | 30 |
| 31 | 0.0787 | 0.0790 | 12.6591 | 0.9969 | 29 |
| 32 | 0.0790 | 0.0793 | 12.6124 | 0.9969 | 28 |
| 33 | 0.0793 | 0.0796 | 12.5660 | 0.9968 | 27 |
| 34 | 0.0796 | 0.0799 | 12.5199 | 0.9968 | 26 |
| 35 | 0.0799 | 0.0802 | 12.4742 | 0.9968 | 25 |
| 36 | 0.0802 | 0.0805 | 12.4288 | 0.9968 | 24 |
| 37 | 0.0805 | 0.0808 | 12.3838 | 0.9968 | 23 |
| 38 | 0.0808 | 0.0810 | 12.3390 | 0.9967 | 22 |
| 39 | 0.0811 | 0.0813 | 12.2946 | 0.9967 | 21 |
| 40 | 0.0814 | 0.0816 | 12.2505 | 0.9967 | 20 |
| 41 | 0.0816 | 0.0819 | 12.2067 | 0.9967 | 19 |
| 42 | 0.0819 | 0.0822 | 12.1632 | 0.9966 | 18 |
| 43 | 0.0822 | 0.0825 | 12.1201 | 0.9966 | 17 |
| 44 | 0.0825 | 0.0828 | 12.0772 | 0.9966 | 16 |
| 45 | 0.0828 | 0.0831 | 12.0346 | 0.9966 | 15 |
| 46 | 0.0831 | 0.0834 | 11.9923 | 0.9965 | 14 |
| 47 | 0.0834 | 0.0837 | 11.9504 | 0.9965 | 13 |
| 48 | 0.0837 | 0.0840 | 11.9087 | 0.9965 | 12 |
| 49 | 0.0840 | 0.0843 | 11.8673 | 0.9965 | 11 |
| 50 | 0.0843 | 0.0846 | 11.8262 | 0.9964 | 10 |
| 51 | 0.0845 | 0.0849 | 11.7853 | 0.9964 | 9 |
| 52 | 0.0848 | 0.0851 | 11.7448 | 0.9964 | 8 |
| 53 | 0.0851 | 0.0854 | 11.7045 | 0.9964 | 7 |
| 54 | 0.0854 | 0.0857 | 11.6645 | 0.9963 | 6 |
| 55 | 0.0857 | 0.0860 | 11.6248 | 0.9963 | 5 |
| 56 | 0.0860 | 0.0863 | 11.5853 | 0.9963 | 4 |
| 57 | 0.0863 | 0.0866 | 11.5461 | 0.9963 | 3 |
| 58 | 0.0866 | 0.0869 | 11.5072 | 0.9962 | 2 |
| 59 | 0.0869 | 0.0872 | 11.4685 | 0.9962 | 1 |
| 60 | 0.0872 | 0.0875 | 11.4301 | 0.9962 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|---------|--------|----|
| 0 | 0.0872 | 0.0875 | 11.4301 | 0.9962 | 60 |
| 1 | 0.0874 | 0.0878 | 11.3919 | 0.9962 | 59 |
| 2 | 0.0877 | 0.0881 | 11.3540 | 0.9961 | 58 |
| 3 | 0.0880 | 0.0884 | 11.3163 | 0.9961 | 57 |
| 4 | 0.0883 | 0.0887 | 11.2789 | 0.9961 | 56 |
| 5 | 0.0886 | 0.0890 | 11.2417 | 0.9961 | 55 |
| 6 | 0.0889 | 0.0892 | 11.2048 | 0.9960 | 54 |
| 7 | 0.0892 | 0.0895 | 11.1681 | 0.9960 | 53 |
| 8 | 0.0895 | 0.0898 | 11.1316 | 0.9960 | 52 |
| 9 | 0.0898 | 0.0901 | 11.0954 | 0.9960 | 51 |
| 10 | 0.0901 | 0.0904 | 11.0594 | 0.9959 | 50 |
| 11 | 0.0903 | 0.0907 | 11.0237 | 0.9959 | 49 |
| 12 | 0.0906 | 0.0910 | 10.9882 | 0.9959 | 48 |
| 13 | 0.0909 | 0.0913 | 10.9529 | 0.9959 | 47 |
| 14 | 0.0912 | 0.0916 | 10.9178 | 0.9958 | 46 |
| 15 | 0.0915 | 0.0919 | 10.8829 | 0.9958 | 45 |
| 16 | 0.0918 | 0.0922 | 10.8483 | 0.9958 | 44 |
| 17 | 0.0921 | 0.0925 | 10.8139 | 0.9958 | 43 |
| 18 | 0.0924 | 0.0928 | 10.7797 | 0.9957 | 42 |
| 19 | 0.0927 | 0.0931 | 10.7457 | 0.9957 | 41 |
| 20 | 0.0929 | 0.0934 | 10.7119 | 0.9957 | 40 |
| 21 | 0.0932 | 0.0936 | 10.6783 | 0.9956 | 39 |
| 22 | 0.0935 | 0.0939 | 10.6450 | 0.9956 | 38 |
| 23 | 0.0938 | 0.0942 | 10.6118 | 0.9956 | 37 |
| 24 | 0.0941 | 0.0945 | 10.5789 | 0.9956 | 36 |
| 25 | 0.0944 | 0.0948 | 10.5462 | 0.9955 | 35 |
| 26 | 0.0947 | 0.0951 | 10.5136 | 0.9955 | 34 |
| 27 | 0.0950 | 0.0954 | 10.4813 | 0.9955 | 33 |
| 28 | 0.0953 | 0.0957 | 10.4491 | 0.9955 | 32 |
| 29 | 0.0956 | 0.0960 | 10.4172 | 0.9954 | 31 |
| 30 | 0.0958 | 0.0963 | 10.3854 | 0.9954 | 30 |
| 31 | 0.0961 | 0.0966 | 10.3538 | 0.9954 | 29 |
| 32 | 0.0964 | 0.0969 | 10.3224 | 0.9953 | 28 |
| 33 | 0.0967 | 0.0972 | 10.2913 | 0.9953 | 27 |
| 34 | 0.0970 | 0.0975 | 10.2602 | 0.9953 | 26 |
| 35 | 0.0973 | 0.0978 | 10.2294 | 0.9953 | 25 |
| 36 | 0.0976 | 0.0981 | 10.1988 | 0.9952 | 24 |
| 37 | 0.0979 | 0.0983 | 10.1683 | 0.9952 | 23 |
| 38 | 0.0982 | 0.0986 | 10.1381 | 0.9952 | 22 |
| 39 | 0.0985 | 0.0989 | 10.1080 | 0.9951 | 21 |
| 40 | 0.0987 | 0.0992 | 10.0780 | 0.9951 | 20 |
| 41 | 0.0990 | 0.0995 | 10.0483 | 0.9951 | 19 |
| 42 | 0.0993 | 0.0998 | 10.0187 | 0.9951 | 18 |
| 43 | 0.0996 | 0.1001 | 9.9893 | 0.9950 | 17 |
| 44 | 0.0999 | 0.1004 | 9.9601 | 0.9950 | 16 |
| 45 | 0.1002 | 0.1007 | 9.9310 | 0.9950 | 15 |
| 46 | 0.1005 | 0.1010 | 9.9021 | 0.9949 | 14 |
| 47 | 0.1008 | 0.1013 | 9.8734 | 0.9949 | 13 |
| 48 | 0.1011 | 0.1016 | 9.8448 | 0.9949 | 12 |
| 49 | 0.1013 | 0.1019 | 9.8164 | 0.9949 | 11 |
| 50 | 0.1016 | 0.1022 | 9.7882 | 0.9948 | 10 |
| 51 | 0.1019 | 0.1025 | 9.7601 | 0.9948 | 9 |
| 52 | 0.1022 | 0.1028 | 9.7322 | 0.9948 | 8 |
| 53 | 0.1025 | 0.1030 | 9.7044 | 0.9947 | 7 |
| 54 | 0.1028 | 0.1033 | 9.6768 | 0.9947 | 6 |
| 55 | 0.1031 | 0.1036 | 9.6493 | 0.9947 | 5 |
| 56 | 0.1034 | 0.1039 | 9.6220 | 0.9946 | 4 |
| 57 | 0.1037 | 0.1042 | 9.5949 | 0.9946 | 3 |
| 58 | 0.1039 | 0.1045 | 9.5679 | 0.9946 | 2 |
| 59 | 0.1042 | 0.1048 | 9.5411 | 0.9946 | 1 |
| 60 | 0.1045 | 0.1051 | 9.5144 | 0.9945 | 0 |
| | Cos | Cot | Tan | Sin | |

*96° 186° *276° 6°

NATURAL

7° *97 187 *277°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1045 | 0.1051 | 9.5144 | 0.9945 | 60 |
| 1 | 0.1048 | 0.1054 | 9.4878 | 0.9945 | 59 |
| 2 | 0.1051 | 0.1057 | 9.4614 | 0.9945 | 58 |
| 3 | 0.1054 | 0.1060 | 9.4352 | 0.9944 | 57 |
| 4 | 0.1057 | 0.1063 | 9.4090 | 0.9944 | 56 |
| 5 | 0.1060 | 0.1066 | 9.3831 | 0.9944 | 55 |
| 6 | 0.1063 | 0.1069 | 9.3572 | 0.9943 | 54 |
| 7 | 0.1066 | 0.1072 | 9.3315 | 0.9943 | 53 |
| 8 | 0.1068 | 0.1075 | 9.3060 | 0.9943 | 52 |
| 9 | 0.1071 | 0.1078 | 9.2806 | 0.9942 | 51 |
| 10 | 0.1074 | 0.1080 | 9.2553 | 0.9942 | 50 |
| 11 | 0.1077 | 0.1083 | 9.2302 | 0.9942 | 49 |
| 12 | 0.1080 | 0.1086 | 9.2052 | 0.9942 | 48 |
| 13 | 0.1083 | 0.1089 | 9.1803 | 0.9941 | 47 |
| 14 | 0.1086 | 0.1092 | 9.1555 | 0.9941 | 46 |
| 15 | 0.1089 | 0.1095 | 9.1309 | 0.9941 | 45 |
| 16 | 0.1092 | 0.1098 | 9.1065 | 0.9940 | 44 |
| 17 | 0.1094 | 0.1101 | 9.0821 | 0.9940 | 43 |
| 18 | 0.1097 | 0.1104 | 9.0579 | 0.9940 | 42 |
| 19 | 0.1100 | 0.1107 | 9.0338 | 0.9939 | 41 |
| 20 | 0.1103 | 0.1110 | 9.0098 | 0.9939 | 40 |
| 21 | 0.1106 | 0.1113 | 8.9860 | 0.9939 | 39 |
| 22 | 0.1109 | 0.1116 | 8.9623 | 0.9938 | 38 |
| 23 | 0.1112 | 0.1119 | 8.9387 | 0.9938 | 37 |
| 24 | 0.1115 | 0.1122 | 8.9152 | 0.9938 | 36 |
| 25 | 0.1118 | 0.1125 | 8.8919 | 0.9937 | 35 |
| 26 | 0.1120 | 0.1128 | 8.8686 | 0.9937 | 34 |
| 27 | 0.1123 | 0.1131 | 8.8455 | 0.9937 | 33 |
| 28 | 0.1126 | 0.1133 | 8.8225 | 0.9936 | 32 |
| 29 | 0.1129 | 0.1136 | 8.7996 | 0.9936 | 31 |
| 30 | 0.1132 | 0.1139 | 8.7769 | 0.9936 | 30 |
| 31 | 0.1135 | 0.1142 | 8.7542 | 0.9935 | 29 |
| 32 | 0.1138 | 0.1145 | 8.7317 | 0.9935 | 28 |
| 33 | 0.1141 | 0.1148 | 8.7093 | 0.9935 | 27 |
| 34 | 0.1144 | 0.1151 | 8.6870 | 0.9934 | 26 |
| 35 | 0.1146 | 0.1154 | 8.6648 | 0.9934 | 25 |
| 36 | 0.1149 | 0.1157 | 8.6427 | 0.9934 | 24 |
| 37 | 0.1152 | 0.1160 | 8.6208 | 0.9933 | 23 |
| 38 | 0.1155 | 0.1163 | 8.5989 | 0.9933 | 22 |
| 39 | 0.1158 | 0.1166 | 8.5772 | 0.9933 | 21 |
| 40 | 0.1161 | 0.1169 | 8.5555 | 0.9932 | 20 |
| 41 | 0.1164 | 0.1172 | 8.5340 | 0.9932 | 19 |
| 42 | 0.1167 | 0.1175 | 8.5126 | 0.9932 | 18 |
| 43 | 0.1170 | 0.1178 | 8.4913 | 0.9931 | 17 |
| 44 | 0.1172 | 0.1181 | 8.4701 | 0.9931 | 16 |
| 45 | 0.1175 | 0.1184 | 8.4490 | 0.9931 | 15 |
| 46 | 0.1178 | 0.1187 | 8.4280 | 0.9930 | 14 |
| 47 | 0.1181 | 0.1189 | 8.4071 | 0.9930 | 13 |
| 48 | 0.1184 | 0.1192 | 8.3863 | 0.9930 | 12 |
| 49 | 0.1187 | 0.1195 | 8.3656 | 0.9929 | 11 |
| 50 | 0.1190 | 0.1198 | 8.3450 | 0.9929 | 10 |
| 51 | 0.1193 | 0.1201 | 8.3245 | 0.9929 | 9 |
| 52 | 0.1196 | 0.1204 | 8.3041 | 0.9928 | 8 |
| 53 | 0.1198 | 0.1207 | 8.2838 | 0.9928 | 7 |
| 54 | 0.1201 | 0.1210 | 8.2636 | 0.9928 | 6 |
| 55 | 0.1204 | 0.1213 | 8.2434 | 0.9927 | 5 |
| 56 | 0.1207 | 0.1216 | 8.2234 | 0.9927 | 4 |
| 57 | 0.1210 | 0.1219 | 8.2035 | 0.9927 | 3 |
| 58 | 0.1213 | 0.1222 | 8.1837 | 0.9926 | 2 |
| 59 | 0.1216 | 0.1225 | 8.1640 | 0.9926 | 1 |
| 60 | 0.1219 | 0.1228 | 8.1443 | 0.9925 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1219 | 0.1228 | 8.1443 | 0.9925 | 60 |
| 1 | 0.1222 | 0.1231 | 8.1248 | 0.9925 | 59 |
| 2 | 0.1224 | 0.1234 | 8.1054 | 0.9925 | 58 |
| 3 | 0.1227 | 0.1237 | 8.0860 | 0.9924 | 57 |
| 4 | 0.1230 | 0.1240 | 8.0667 | 0.9924 | 56 |
| 5 | 0.1233 | 0.1243 | 8.0476 | 0.9924 | 55 |
| 6 | 0.1236 | 0.1246 | 8.0285 | 0.9923 | 54 |
| 7 | 0.1239 | 0.1249 | 8.0095 | 0.9923 | 53 |
| 8 | 0.1242 | 0.1251 | 7.9906 | 0.9923 | 52 |
| 9 | 0.1245 | 0.1254 | 7.9718 | 0.9922 | 51 |
| 10 | 0.1248 | 0.1257 | 7.9530 | 0.9922 | 50 |
| 11 | 0.1250 | 0.1260 | 7.9344 | 0.9922 | 49 |
| 12 | 0.1253 | 0.1263 | 7.9158 | 0.9921 | 48 |
| 13 | 0.1256 | 0.1266 | 7.8973 | 0.9921 | 47 |
| 14 | 0.1259 | 0.1269 | 7.8789 | 0.9920 | 46 |
| 15 | 0.1262 | 0.1272 | 7.8606 | 0.9920 | 45 |
| 16 | 0.1265 | 0.1275 | 7.8424 | 0.9920 | 44 |
| 17 | 0.1268 | 0.1278 | 7.8243 | 0.9919 | 43 |
| 18 | 0.1271 | 0.1281 | 7.8062 | 0.9919 | 42 |
| 19 | 0.1274 | 0.1284 | 7.7882 | 0.9919 | 41 |
| 20 | 0.1276 | 0.1287 | 7.7704 | 0.9918 | 40 |
| 21 | 0.1279 | 0.1290 | 7.7525 | 0.9918 | 39 |
| 22 | 0.1282 | 0.1293 | 7.7348 | 0.9917 | 38 |
| 23 | 0.1285 | 0.1296 | 7.7171 | 0.9917 | 37 |
| 24 | 0.1288 | 0.1299 | 7.6996 | 0.9917 | 36 |
| 25 | 0.1291 | 0.1302 | 7.6821 | 0.9916 | 35 |
| 26 | 0.1294 | 0.1305 | 7.6647 | 0.9916 | 34 |
| 27 | 0.1297 | 0.1308 | 7.6473 | 0.9916 | 33 |
| 28 | 0.1299 | 0.1311 | 7.6301 | 0.9915 | 32 |
| 29 | 0.1302 | 0.1314 | 7.6129 | 0.9915 | 31 |
| 30 | 0.1305 | 0.1317 | 7.5958 | 0.9914 | 30 |
| 31 | 0.1308 | 0.1319 | 7.5787 | 0.9914 | 29 |
| 32 | 0.1311 | 0.1322 | 7.5618 | 0.9914 | 28 |
| 33 | 0.1314 | 0.1325 | 7.5449 | 0.9913 | 27 |
| 34 | 0.1317 | 0.1328 | 7.5281 | 0.9913 | 26 |
| 35 | 0.1320 | 0.1331 | 7.5113 | 0.9913 | 25 |
| 36 | 0.1323 | 0.1334 | 7.4947 | 0.9912 | 24 |
| 37 | 0.1325 | 0.1337 | 7.4781 | 0.9912 | 23 |
| 38 | 0.1328 | 0.1340 | 7.4615 | 0.9911 | 22 |
| 39 | 0.1331 | 0.1343 | 7.4451 | 0.9911 | 21 |
| 40 | 0.1334 | 0.1346 | 7.4287 | 0.9911 | 20 |
| 41 | 0.1337 | 0.1349 | 7.4124 | 0.9910 | 19 |
| 42 | 0.1340 | 0.1352 | 7.3962 | 0.9910 | 18 |
| 43 | 0.1343 | 0.1355 | 7.3800 | 0.9909 | 17 |
| 44 | 0.1346 | 0.1358 | 7.3639 | 0.9909 | 16 |
| 45 | 0.1349 | 0.1361 | 7.3479 | 0.9909 | 15 |
| 46 | 0.1351 | 0.1364 | 7.3319 | 0.9908 | 14 |
| 47 | 0.1354 | 0.1367 | 7.3160 | 0.9908 | 13 |
| 48 | 0.1357 | 0.1370 | 7.3002 | 0.9907 | 12 |
| 49 | 0.1360 | 0.1373 | 7.2844 | 0.9907 | 11 |
| 50 | 0.1363 | 0.1376 | 7.2687 | 0.9907 | 10 |
| 51 | 0.1366 | 0.1379 | 7.2531 | 0.9906 | 9 |
| 52 | 0.1369 | 0.1382 | 7.2375 | 0.9906 | 8 |
| 53 | 0.1372 | 0.1385 | 7.2220 | 0.9905 | 7 |
| 54 | 0.1374 | 0.1388 | 7.2066 | 0.9905 | 6 |
| 55 | 0.1377 | 0.1391 | 7.1912 | 0.9905 | 5 |
| 56 | 0.1380 | 0.1394 | 7.1759 | 0.9904 | 4 |
| 57 | 0.1383 | 0.1397 | 7.1607 | 0.9904 | 3 |
| 58 | 0.1386 | 0.1399 | 7.1455 | 0.9903 | 2 |
| 59 | 0.1389 | 0.1402 | 7.1304 | 0.9903 | 1 |
| 60 | 0.1392 | 0.1405 | 7.1154 | 0.9903 | 0 |
| | Cos | Cot | Tan | Sin | |

*173° 263° *353° 83°

NATURAL

82° *172° 262° *352°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1302 | 0.1405 | 7.1154 | 0.9903 | 60 |
| 1 | 0.1305 | 0.1408 | 7.1004 | 0.9902 | 59 |
| 2 | 0.1307 | 0.1411 | 7.0855 | 0.9902 | 58 |
| 3 | 0.1309 | 0.1414 | 7.0706 | 0.9901 | 57 |
| 4 | 0.1313 | 0.1417 | 7.0558 | 0.9901 | 56 |
| 5 | 0.1316 | 0.1420 | 7.0410 | 0.9901 | 55 |
| 6 | 0.1319 | 0.1423 | 7.0264 | 0.9900 | 54 |
| 7 | 0.1322 | 0.1426 | 7.0117 | 0.9900 | 53 |
| 8 | 0.1325 | 0.1429 | 6.9972 | 0.9899 | 52 |
| 9 | 0.1328 | 0.1432 | 6.9827 | 0.9899 | 51 |
| 10 | 0.1331 | 0.1435 | 6.9682 | 0.9899 | 50 |
| 11 | 0.1334 | 0.1438 | 6.9538 | 0.9898 | 49 |
| 12 | 0.1337 | 0.1441 | 6.9395 | 0.9898 | 48 |
| 13 | 0.1340 | 0.1444 | 6.9252 | 0.9897 | 47 |
| 14 | 0.1343 | 0.1447 | 6.9110 | 0.9897 | 46 |
| 15 | 0.1345 | 0.1450 | 6.8969 | 0.9897 | 45 |
| 16 | 0.1348 | 0.1453 | 6.8828 | 0.9896 | 44 |
| 17 | 0.1351 | 0.1456 | 6.8687 | 0.9896 | 43 |
| 18 | 0.1354 | 0.1459 | 6.8548 | 0.9895 | 42 |
| 19 | 0.1357 | 0.1462 | 6.8408 | 0.9895 | 41 |
| 20 | 0.1360 | 0.1465 | 6.8269 | 0.9894 | 40 |
| 21 | 0.1363 | 0.1468 | 6.8131 | 0.9894 | 39 |
| 22 | 0.1366 | 0.1471 | 6.7994 | 0.9894 | 38 |
| 23 | 0.1369 | 0.1474 | 6.7856 | 0.9893 | 37 |
| 24 | 0.1372 | 0.1477 | 6.7720 | 0.9893 | 36 |
| 25 | 0.1375 | 0.1480 | 6.7584 | 0.9892 | 35 |
| 26 | 0.1378 | 0.1483 | 6.7448 | 0.9892 | 34 |
| 27 | 0.1381 | 0.1486 | 6.7313 | 0.9891 | 33 |
| 28 | 0.1384 | 0.1489 | 6.7179 | 0.9891 | 32 |
| 29 | 0.1387 | 0.1492 | 6.7045 | 0.9891 | 31 |
| 30 | 0.1390 | 0.1495 | 6.6912 | 0.9890 | 30 |
| 31 | 0.1393 | 0.1497 | 6.6779 | 0.9890 | 29 |
| 32 | 0.1396 | 0.1500 | 6.6646 | 0.9889 | 28 |
| 33 | 0.1399 | 0.1503 | 6.6514 | 0.9889 | 27 |
| 34 | 0.1402 | 0.1506 | 6.6383 | 0.9888 | 26 |
| 35 | 0.1405 | 0.1509 | 6.6252 | 0.9888 | 25 |
| 36 | 0.1408 | 0.1512 | 6.6122 | 0.9888 | 24 |
| 37 | 0.1411 | 0.1515 | 6.5992 | 0.9887 | 23 |
| 38 | 0.1414 | 0.1518 | 6.5863 | 0.9887 | 22 |
| 39 | 0.1417 | 0.1521 | 6.5734 | 0.9886 | 21 |
| 40 | 0.1420 | 0.1524 | 6.5606 | 0.9886 | 20 |
| 41 | 0.1510 | 0.1527 | 6.5478 | 0.9885 | 19 |
| 42 | 0.1513 | 0.1530 | 6.5350 | 0.9885 | 18 |
| 43 | 0.1516 | 0.1533 | 6.5223 | 0.9884 | 17 |
| 44 | 0.1519 | 0.1536 | 6.5097 | 0.9884 | 16 |
| 45 | 0.1522 | 0.1539 | 6.4971 | 0.9884 | 15 |
| 46 | 0.1525 | 0.1542 | 6.4846 | 0.9883 | 14 |
| 47 | 0.1528 | 0.1545 | 6.4721 | 0.9883 | 13 |
| 48 | 0.1531 | 0.1548 | 6.4596 | 0.9882 | 12 |
| 49 | 0.1534 | 0.1551 | 6.4472 | 0.9882 | 11 |
| 50 | 0.1537 | 0.1554 | 6.4348 | 0.9881 | 10 |
| 51 | 0.1540 | 0.1557 | 6.4225 | 0.9881 | 9 |
| 52 | 0.1543 | 0.1560 | 6.4103 | 0.9880 | 8 |
| 53 | 0.1546 | 0.1563 | 6.3980 | 0.9880 | 7 |
| 54 | 0.1549 | 0.1566 | 6.3859 | 0.9880 | 6 |
| 55 | 0.1552 | 0.1569 | 6.3737 | 0.9879 | 5 |
| 56 | 0.1555 | 0.1572 | 6.3617 | 0.9879 | 4 |
| 57 | 0.1558 | 0.1575 | 6.3496 | 0.9878 | 3 |
| 58 | 0.1561 | 0.1578 | 6.3376 | 0.9878 | 2 |
| 59 | 0.1564 | 0.1581 | 6.3257 | 0.9877 | 1 |
| 60 | 0.1567 | 0.1584 | 6.3138 | 0.9877 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1564 | 0.1584 | 6.3138 | 0.9877 | 60 |
| 1 | 0.1567 | 0.1587 | 6.3019 | 0.9876 | 59 |
| 2 | 0.1570 | 0.1590 | 6.2901 | 0.9876 | 58 |
| 3 | 0.1573 | 0.1593 | 6.2783 | 0.9876 | 57 |
| 4 | 0.1576 | 0.1596 | 6.2666 | 0.9875 | 56 |
| 5 | 0.1579 | 0.1599 | 6.2549 | 0.9875 | 55 |
| 6 | 0.1582 | 0.1602 | 6.2432 | 0.9874 | 54 |
| 7 | 0.1584 | 0.1605 | 6.2316 | 0.9874 | 53 |
| 8 | 0.1587 | 0.1608 | 6.2200 | 0.9873 | 52 |
| 9 | 0.1590 | 0.1611 | 6.2085 | 0.9873 | 51 |
| 10 | 0.1593 | 0.1614 | 6.1970 | 0.9872 | 50 |
| 11 | 0.1596 | 0.1617 | 6.1856 | 0.9872 | 49 |
| 12 | 0.1599 | 0.1620 | 6.1742 | 0.9871 | 48 |
| 13 | 0.1602 | 0.1623 | 6.1628 | 0.9871 | 47 |
| 14 | 0.1605 | 0.1626 | 6.1515 | 0.9870 | 46 |
| 15 | 0.1607 | 0.1629 | 6.1402 | 0.9870 | 45 |
| 16 | 0.1610 | 0.1632 | 6.1290 | 0.9869 | 44 |
| 17 | 0.1613 | 0.1635 | 6.1178 | 0.9869 | 43 |
| 18 | 0.1616 | 0.1638 | 6.1066 | 0.9869 | 42 |
| 19 | 0.1619 | 0.1641 | 6.0955 | 0.9868 | 41 |
| 20 | 0.1622 | 0.1644 | 6.0844 | 0.9868 | 40 |
| 21 | 0.1625 | 0.1647 | 6.0734 | 0.9867 | 39 |
| 22 | 0.1628 | 0.1650 | 6.0624 | 0.9867 | 38 |
| 23 | 0.1630 | 0.1653 | 6.0514 | 0.9866 | 37 |
| 24 | 0.1633 | 0.1655 | 6.0405 | 0.9866 | 36 |
| 25 | 0.1636 | 0.1658 | 6.0296 | 0.9865 | 35 |
| 26 | 0.1639 | 0.1661 | 6.0188 | 0.9865 | 34 |
| 27 | 0.1642 | 0.1664 | 6.0080 | 0.9864 | 33 |
| 28 | 0.1645 | 0.1667 | 5.9972 | 0.9864 | 32 |
| 29 | 0.1648 | 0.1670 | 5.9865 | 0.9863 | 31 |
| 30 | 0.1650 | 0.1673 | 5.9758 | 0.9863 | 30 |
| 31 | 0.1653 | 0.1676 | 5.9651 | 0.9862 | 29 |
| 32 | 0.1656 | 0.1679 | 5.9545 | 0.9862 | 28 |
| 33 | 0.1659 | 0.1682 | 5.9439 | 0.9861 | 27 |
| 34 | 0.1662 | 0.1685 | 5.9333 | 0.9861 | 26 |
| 35 | 0.1665 | 0.1688 | 5.9228 | 0.9860 | 25 |
| 36 | 0.1668 | 0.1691 | 5.9124 | 0.9860 | 24 |
| 37 | 0.1671 | 0.1694 | 5.9019 | 0.9859 | 23 |
| 38 | 0.1673 | 0.1697 | 5.8915 | 0.9859 | 22 |
| 39 | 0.1676 | 0.1700 | 5.8811 | 0.9859 | 21 |
| 40 | 0.1679 | 0.1703 | 5.8708 | 0.9858 | 20 |
| 41 | 0.1682 | 0.1706 | 5.8605 | 0.9858 | 19 |
| 42 | 0.1685 | 0.1709 | 5.8502 | 0.9857 | 18 |
| 43 | 0.1688 | 0.1712 | 5.8400 | 0.9857 | 17 |
| 44 | 0.1691 | 0.1715 | 5.8298 | 0.9856 | 16 |
| 45 | 0.1693 | 0.1718 | 5.8197 | 0.9856 | 15 |
| 46 | 0.1696 | 0.1721 | 5.8095 | 0.9855 | 14 |
| 47 | 0.1699 | 0.1724 | 5.7994 | 0.9855 | 13 |
| 48 | 0.1702 | 0.1727 | 5.7894 | 0.9854 | 12 |
| 49 | 0.1705 | 0.1730 | 5.7794 | 0.9854 | 11 |
| 50 | 0.1708 | 0.1733 | 5.7694 | 0.9853 | 10 |
| 51 | 0.1711 | 0.1736 | 5.7594 | 0.9853 | 9 |
| 52 | 0.1714 | 0.1739 | 5.7495 | 0.9852 | 8 |
| 53 | 0.1716 | 0.1742 | 5.7396 | 0.9852 | 7 |
| 54 | 0.1719 | 0.1745 | 5.7297 | 0.9851 | 6 |
| 55 | 0.1722 | 0.1748 | 5.7199 | 0.9851 | 5 |
| 56 | 0.1725 | 0.1751 | 5.7101 | 0.9850 | 4 |
| 57 | 0.1728 | 0.1754 | 5.7004 | 0.9850 | 3 |
| 58 | 0.1731 | 0.1757 | 5.6906 | 0.9849 | 2 |
| 59 | 0.1734 | 0.1760 | 5.6809 | 0.9849 | 1 |
| 60 | 0.1736 | 0.1763 | 5.6713 | 0.9848 | 0 |
| | Cos | Cot | Tan | Sin | |

*100° 190° *280°

10°

NATURAL

11°

*101° 191° *281°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1736 | 0.1763 | 5.6713 | 0.9848 | 60 |
| 1 | 0.1739 | 0.1766 | 5.6617 | 0.9848 | 59 |
| 2 | 0.1742 | 0.1769 | 5.6521 | 0.9847 | 58 |
| 3 | 0.1745 | 0.1772 | 5.6425 | 0.9847 | 57 |
| 4 | 0.1748 | 0.1775 | 5.6329 | 0.9846 | 56 |
| 5 | 0.1751 | 0.1778 | 5.6234 | 0.9846 | 55 |
| 6 | 0.1754 | 0.1781 | 5.6140 | 0.9845 | 54 |
| 7 | 0.1757 | 0.1784 | 5.6045 | 0.9845 | 53 |
| 8 | 0.1759 | 0.1787 | 5.5951 | 0.9844 | 52 |
| 9 | 0.1762 | 0.1790 | 5.5857 | 0.9843 | 51 |
| 10 | 0.1765 | 0.1793 | 5.5764 | 0.9843 | 50 |
| 11 | 0.1768 | 0.1796 | 5.5671 | 0.9842 | 49 |
| 12 | 0.1771 | 0.1799 | 5.5578 | 0.9842 | 48 |
| 13 | 0.1774 | 0.1802 | 5.5485 | 0.9841 | 47 |
| 14 | 0.1777 | 0.1805 | 5.5393 | 0.9841 | 46 |
| 15 | 0.1779 | 0.1808 | 5.5301 | 0.9840 | 45 |
| 16 | 0.1782 | 0.1811 | 5.5209 | 0.9840 | 44 |
| 17 | 0.1785 | 0.1814 | 5.5118 | 0.9839 | 43 |
| 18 | 0.1788 | 0.1817 | 5.5026 | 0.9839 | 42 |
| 19 | 0.1791 | 0.1820 | 5.4936 | 0.9838 | 41 |
| 20 | 0.1794 | 0.1823 | 5.4845 | 0.9838 | 40 |
| 21 | 0.1797 | 0.1826 | 5.4755 | 0.9837 | 39 |
| 22 | 0.1799 | 0.1829 | 5.4665 | 0.9837 | 38 |
| 23 | 0.1802 | 0.1832 | 5.4575 | 0.9836 | 37 |
| 24 | 0.1805 | 0.1835 | 5.4486 | 0.9836 | 36 |
| 25 | 0.1808 | 0.1838 | 5.4397 | 0.9835 | 35 |
| 26 | 0.1811 | 0.1841 | 5.4308 | 0.9835 | 34 |
| 27 | 0.1814 | 0.1844 | 5.4219 | 0.9834 | 33 |
| 28 | 0.1817 | 0.1847 | 5.4131 | 0.9834 | 32 |
| 29 | 0.1819 | 0.1850 | 5.4043 | 0.9833 | 31 |
| 30 | 0.1822 | 0.1853 | 5.3955 | 0.9833 | 30 |
| 31 | 0.1825 | 0.1856 | 5.3868 | 0.9832 | 29 |
| 32 | 0.1828 | 0.1859 | 5.3781 | 0.9831 | 28 |
| 33 | 0.1831 | 0.1862 | 5.3694 | 0.9831 | 27 |
| 34 | 0.1834 | 0.1865 | 5.3607 | 0.9830 | 26 |
| 35 | 0.1837 | 0.1868 | 5.3521 | 0.9830 | 25 |
| 36 | 0.1840 | 0.1871 | 5.3435 | 0.9829 | 24 |
| 37 | 0.1842 | 0.1874 | 5.3349 | 0.9829 | 23 |
| 38 | 0.1845 | 0.1877 | 5.3263 | 0.9828 | 22 |
| 39 | 0.1848 | 0.1880 | 5.3178 | 0.9828 | 21 |
| 40 | 0.1851 | 0.1883 | 5.3093 | 0.9827 | 20 |
| 41 | 0.1854 | 0.1887 | 5.3008 | 0.9827 | 19 |
| 42 | 0.1857 | 0.1890 | 5.2924 | 0.9826 | 18 |
| 43 | 0.1860 | 0.1893 | 5.2839 | 0.9826 | 17 |
| 44 | 0.1862 | 0.1896 | 5.2755 | 0.9825 | 16 |
| 45 | 0.1865 | 0.1899 | 5.2672 | 0.9825 | 15 |
| 46 | 0.1868 | 0.1902 | 5.2588 | 0.9824 | 14 |
| 47 | 0.1871 | 0.1905 | 5.2505 | 0.9823 | 13 |
| 48 | 0.1874 | 0.1908 | 5.2422 | 0.9823 | 12 |
| 49 | 0.1877 | 0.1911 | 5.2339 | 0.9822 | 11 |
| 50 | 0.1880 | 0.1914 | 5.2257 | 0.9822 | 10 |
| 51 | 0.1882 | 0.1917 | 5.2174 | 0.9821 | 9 |
| 52 | 0.1885 | 0.1920 | 5.2092 | 0.9821 | 8 |
| 53 | 0.1888 | 0.1923 | 5.2011 | 0.9820 | 7 |
| 54 | 0.1891 | 0.1926 | 5.1929 | 0.9820 | 6 |
| 55 | 0.1894 | 0.1929 | 5.1848 | 0.9819 | 5 |
| 56 | 0.1897 | 0.1932 | 5.1767 | 0.9818 | 4 |
| 57 | 0.1900 | 0.1935 | 5.1686 | 0.9818 | 3 |
| 58 | 0.1902 | 0.1938 | 5.1606 | 0.9817 | 2 |
| 59 | 0.1905 | 0.1941 | 5.1526 | 0.9817 | 1 |
| 60 | 0.1908 | 0.1944 | 5.1446 | 0.9816 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.1908 | 0.1944 | 5.1446 | 0.9816 | 60 |
| 1 | 0.1911 | 0.1947 | 5.1366 | 0.9816 | 59 |
| 2 | 0.1914 | 0.1950 | 5.1286 | 0.9815 | 58 |
| 3 | 0.1917 | 0.1953 | 5.1207 | 0.9815 | 57 |
| 4 | 0.1920 | 0.1956 | 5.1128 | 0.9814 | 56 |
| 5 | 0.1922 | 0.1959 | 5.1049 | 0.9813 | 55 |
| 6 | 0.1925 | 0.1962 | 5.0970 | 0.9813 | 54 |
| 7 | 0.1928 | 0.1965 | 5.0892 | 0.9812 | 53 |
| 8 | 0.1931 | 0.1968 | 5.0814 | 0.9812 | 52 |
| 9 | 0.1934 | 0.1971 | 5.0736 | 0.9811 | 51 |
| 10 | 0.1937 | 0.1974 | 5.0658 | 0.9811 | 50 |
| 11 | 0.1939 | 0.1977 | 5.0581 | 0.9810 | 49 |
| 12 | 0.1942 | 0.1980 | 5.0504 | 0.9810 | 48 |
| 13 | 0.1945 | 0.1983 | 5.0427 | 0.9809 | 47 |
| 14 | 0.1948 | 0.1986 | 5.0350 | 0.9808 | 46 |
| 15 | 0.1951 | 0.1989 | 5.0273 | 0.9808 | 45 |
| 16 | 0.1954 | 0.1992 | 5.0197 | 0.9807 | 44 |
| 17 | 0.1957 | 0.1995 | 5.0121 | 0.9807 | 43 |
| 18 | 0.1959 | 0.1998 | 5.0045 | 0.9806 | 42 |
| 19 | 0.1962 | 0.2001 | 4.9969 | 0.9806 | 41 |
| 20 | 0.1965 | 0.2004 | 4.9894 | 0.9805 | 40 |
| 21 | 0.1968 | 0.2007 | 4.9819 | 0.9804 | 39 |
| 22 | 0.1971 | 0.2010 | 4.9744 | 0.9804 | 38 |
| 23 | 0.1974 | 0.2013 | 4.9669 | 0.9803 | 37 |
| 24 | 0.1977 | 0.2016 | 4.9594 | 0.9803 | 36 |
| 25 | 0.1979 | 0.2019 | 4.9520 | 0.9802 | 35 |
| 26 | 0.1982 | 0.2022 | 4.9446 | 0.9802 | 34 |
| 27 | 0.1985 | 0.2025 | 4.9372 | 0.9801 | 33 |
| 28 | 0.1988 | 0.2028 | 4.9298 | 0.9800 | 32 |
| 29 | 0.1991 | 0.2031 | 4.9225 | 0.9800 | 31 |
| 30 | 0.1994 | 0.2035 | 4.9152 | 0.9799 | 30 |
| 31 | 0.1997 | 0.2038 | 4.9078 | 0.9799 | 29 |
| 32 | 0.1999 | 0.2041 | 4.9006 | 0.9798 | 28 |
| 33 | 0.2002 | 0.2044 | 4.8933 | 0.9798 | 27 |
| 34 | 0.2005 | 0.2047 | 4.8860 | 0.9797 | 26 |
| 35 | 0.2008 | 0.2050 | 4.8788 | 0.9796 | 25 |
| 36 | 0.2011 | 0.2053 | 4.8716 | 0.9796 | 24 |
| 37 | 0.2014 | 0.2056 | 4.8644 | 0.9795 | 23 |
| 38 | 0.2016 | 0.2059 | 4.8573 | 0.9795 | 22 |
| 39 | 0.2019 | 0.2062 | 4.8501 | 0.9794 | 21 |
| 40 | 0.2022 | 0.2065 | 4.8430 | 0.9793 | 20 |
| 41 | 0.2025 | 0.2068 | 4.8359 | 0.9793 | 19 |
| 42 | 0.2028 | 0.2071 | 4.8288 | 0.9792 | 18 |
| 43 | 0.2031 | 0.2074 | 4.8218 | 0.9792 | 17 |
| 44 | 0.2034 | 0.2077 | 4.8147 | 0.9791 | 16 |
| 45 | 0.2036 | 0.2080 | 4.8077 | 0.9790 | 15 |
| 46 | 0.2039 | 0.2083 | 4.8007 | 0.9790 | 14 |
| 47 | 0.2042 | 0.2086 | 4.7937 | 0.9789 | 13 |
| 48 | 0.2045 | 0.2089 | 4.7867 | 0.9789 | 12 |
| 49 | 0.2048 | 0.2092 | 4.7798 | 0.9788 | 11 |
| 50 | 0.2051 | 0.2095 | 4.7729 | 0.9787 | 10 |
| 51 | 0.2054 | 0.2098 | 4.7659 | 0.9787 | 9 |
| 52 | 0.2056 | 0.2101 | 4.7591 | 0.9786 | 8 |
| 53 | 0.2059 | 0.2104 | 4.7522 | 0.9786 | 7 |
| 54 | 0.2062 | 0.2107 | 4.7453 | 0.9785 | 6 |
| 55 | 0.2065 | 0.2110 | 4.7385 | 0.9784 | 5 |
| 56 | 0.2068 | 0.2113 | 4.7317 | 0.9784 | 4 |
| 57 | 0.2071 | 0.2116 | 4.7249 | 0.9783 | 3 |
| 58 | 0.2073 | 0.2119 | 4.7181 | 0.9783 | 2 |
| 59 | 0.2076 | 0.2123 | 4.7114 | 0.9782 | 1 |
| 60 | 0.2079 | 0.2126 | 4.7046 | 0.9781 | 0 |
| | Cos | Cot | Tan | Sin | |

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*168° 258° *348°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2079 | 0.2126 | 4.7046 | 0.9781 | 60 |
| 1 | 0.2082 | 0.2129 | 4.6979 | 0.9781 | 59 |
| 2 | 0.2085 | 0.2132 | 4.6912 | 0.9780 | 58 |
| 3 | 0.2088 | 0.2135 | 4.6845 | 0.9780 | 57 |
| 4 | 0.2090 | 0.2138 | 4.6779 | 0.9779 | 56 |
| 5 | 0.2093 | 0.2141 | 4.6712 | 0.9778 | 55 |
| 6 | 0.2096 | 0.2144 | 4.6646 | 0.9778 | 54 |
| 7 | 0.2099 | 0.2147 | 4.6580 | 0.9777 | 53 |
| 8 | 0.2102 | 0.2150 | 4.6514 | 0.9777 | 52 |
| 9 | 0.2105 | 0.2153 | 4.6448 | 0.9776 | 51 |
| 10 | 0.2108 | 0.2156 | 4.6382 | 0.9775 | 50 |
| 11 | 0.2110 | 0.2159 | 4.6317 | 0.9775 | 49 |
| 12 | 0.2113 | 0.2162 | 4.6252 | 0.9774 | 48 |
| 13 | 0.2116 | 0.2165 | 4.6187 | 0.9774 | 47 |
| 14 | 0.2119 | 0.2168 | 4.6122 | 0.9773 | 46 |
| 15 | 0.2122 | 0.2171 | 4.6057 | 0.9772 | 45 |
| 16 | 0.2125 | 0.2174 | 4.5993 | 0.9772 | 44 |
| 17 | 0.2127 | 0.2177 | 4.5928 | 0.9771 | 43 |
| 18 | 0.2130 | 0.2180 | 4.5864 | 0.9770 | 42 |
| 19 | 0.2133 | 0.2183 | 4.5800 | 0.9770 | 41 |
| 20 | 0.2136 | 0.2186 | 4.5736 | 0.9769 | 40 |
| 21 | 0.2139 | 0.2189 | 4.5673 | 0.9769 | 39 |
| 22 | 0.2142 | 0.2193 | 4.5609 | 0.9768 | 38 |
| 23 | 0.2145 | 0.2196 | 4.5546 | 0.9767 | 37 |
| 24 | 0.2147 | 0.2199 | 4.5483 | 0.9767 | 36 |
| 25 | 0.2150 | 0.2202 | 4.5420 | 0.9766 | 35 |
| 26 | 0.2153 | 0.2205 | 4.5357 | 0.9765 | 34 |
| 27 | 0.2156 | 0.2208 | 4.5294 | 0.9765 | 33 |
| 28 | 0.2159 | 0.2211 | 4.5232 | 0.9764 | 32 |
| 29 | 0.2162 | 0.2214 | 4.5169 | 0.9764 | 31 |
| 30 | 0.2164 | 0.2217 | 4.5107 | 0.9763 | 30 |
| 31 | 0.2167 | 0.2220 | 4.5045 | 0.9762 | 29 |
| 32 | 0.2170 | 0.2223 | 4.4983 | 0.9762 | 28 |
| 33 | 0.2173 | 0.2226 | 4.4922 | 0.9761 | 27 |
| 34 | 0.2176 | 0.2229 | 4.4860 | 0.9760 | 26 |
| 35 | 0.2179 | 0.2232 | 4.4799 | 0.9760 | 25 |
| 36 | 0.2181 | 0.2235 | 4.4737 | 0.9759 | 24 |
| 37 | 0.2184 | 0.2238 | 4.4676 | 0.9759 | 23 |
| 38 | 0.2187 | 0.2241 | 4.4615 | 0.9758 | 22 |
| 39 | 0.2190 | 0.2244 | 4.4555 | 0.9757 | 21 |
| 40 | 0.2193 | 0.2247 | 4.4494 | 0.9757 | 20 |
| 41 | 0.2196 | 0.2251 | 4.4434 | 0.9756 | 19 |
| 42 | 0.2198 | 0.2254 | 4.4373 | 0.9755 | 18 |
| 43 | 0.2201 | 0.2257 | 4.4313 | 0.9755 | 17 |
| 44 | 0.2204 | 0.2260 | 4.4253 | 0.9754 | 16 |
| 45 | 0.2207 | 0.2263 | 4.4194 | 0.9753 | 15 |
| 46 | 0.2210 | 0.2266 | 4.4134 | 0.9753 | 14 |
| 47 | 0.2213 | 0.2269 | 4.4075 | 0.9752 | 13 |
| 48 | 0.2215 | 0.2272 | 4.4015 | 0.9751 | 12 |
| 49 | 0.2218 | 0.2275 | 4.3956 | 0.9751 | 11 |
| 50 | 0.2221 | 0.2278 | 4.3897 | 0.9750 | 10 |
| 51 | 0.2224 | 0.2281 | 4.3838 | 0.9750 | 9 |
| 52 | 0.2227 | 0.2284 | 4.3779 | 0.9749 | 8 |
| 53 | 0.2230 | 0.2287 | 4.3721 | 0.9748 | 7 |
| 54 | 0.2233 | 0.2290 | 4.3662 | 0.9748 | 6 |
| 55 | 0.2235 | 0.2293 | 4.3604 | 0.9747 | 5 |
| 56 | 0.2238 | 0.2296 | 4.3546 | 0.9746 | 4 |
| 57 | 0.2241 | 0.2299 | 4.3488 | 0.9746 | 3 |
| 58 | 0.2244 | 0.2303 | 4.3430 | 0.9745 | 2 |
| 59 | 0.2247 | 0.2306 | 4.3372 | 0.9744 | 1 |
| 60 | 0.2250 | 0.2309 | 4.3315 | 0.9744 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2250 | 0.2309 | 4.3315 | 0.9744 | 60 |
| 1 | 0.2252 | 0.2312 | 4.3257 | 0.9743 | 59 |
| 2 | 0.2255 | 0.2315 | 4.3200 | 0.9742 | 58 |
| 3 | 0.2258 | 0.2318 | 4.3143 | 0.9742 | 57 |
| 4 | 0.2261 | 0.2321 | 4.3086 | 0.9741 | 56 |
| 5 | 0.2264 | 0.2324 | 4.3029 | 0.9740 | 55 |
| 6 | 0.2267 | 0.2327 | 4.2972 | 0.9740 | 54 |
| 7 | 0.2269 | 0.2330 | 4.2916 | 0.9739 | 53 |
| 8 | 0.2272 | 0.2333 | 4.2859 | 0.9738 | 52 |
| 9 | 0.2275 | 0.2336 | 4.2803 | 0.9738 | 51 |
| 10 | 0.2278 | 0.2339 | 4.2747 | 0.9737 | 50 |
| 11 | 0.2281 | 0.2342 | 4.2691 | 0.9736 | 49 |
| 12 | 0.2284 | 0.2345 | 4.2635 | 0.9736 | 48 |
| 13 | 0.2286 | 0.2349 | 4.2580 | 0.9735 | 47 |
| 14 | 0.2289 | 0.2352 | 4.2524 | 0.9734 | 46 |
| 15 | 0.2292 | 0.2355 | 4.2468 | 0.9734 | 45 |
| 16 | 0.2295 | 0.2358 | 4.2413 | 0.9733 | 44 |
| 17 | 0.2298 | 0.2361 | 4.2358 | 0.9732 | 43 |
| 18 | 0.2300 | 0.2364 | 4.2303 | 0.9732 | 42 |
| 19 | 0.2303 | 0.2367 | 4.2248 | 0.9731 | 41 |
| 20 | 0.2306 | 0.2370 | 4.2193 | 0.9730 | 40 |
| 21 | 0.2309 | 0.2373 | 4.2139 | 0.9730 | 39 |
| 22 | 0.2312 | 0.2376 | 4.2084 | 0.9729 | 38 |
| 23 | 0.2315 | 0.2379 | 4.2030 | 0.9728 | 37 |
| 24 | 0.2317 | 0.2382 | 4.1976 | 0.9728 | 36 |
| 25 | 0.2320 | 0.2385 | 4.1922 | 0.9727 | 35 |
| 26 | 0.2323 | 0.2388 | 4.1868 | 0.9726 | 34 |
| 27 | 0.2326 | 0.2392 | 4.1814 | 0.9726 | 33 |
| 28 | 0.2329 | 0.2395 | 4.1760 | 0.9725 | 32 |
| 29 | 0.2332 | 0.2398 | 4.1706 | 0.9724 | 31 |
| 30 | 0.2334 | 0.2401 | 4.1653 | 0.9724 | 30 |
| 31 | 0.2337 | 0.2404 | 4.1600 | 0.9723 | 29 |
| 32 | 0.2340 | 0.2407 | 4.1547 | 0.9722 | 28 |
| 33 | 0.2343 | 0.2410 | 4.1493 | 0.9722 | 27 |
| 34 | 0.2346 | 0.2413 | 4.1441 | 0.9721 | 26 |
| 35 | 0.2349 | 0.2416 | 4.1388 | 0.9720 | 25 |
| 36 | 0.2351 | 0.2419 | 4.1335 | 0.9720 | 24 |
| 37 | 0.2354 | 0.2422 | 4.1282 | 0.9719 | 23 |
| 38 | 0.2357 | 0.2425 | 4.1230 | 0.9718 | 22 |
| 39 | 0.2360 | 0.2428 | 4.1178 | 0.9718 | 21 |
| 40 | 0.2363 | 0.2432 | 4.1126 | 0.9717 | 20 |
| 41 | 0.2366 | 0.2435 | 4.1074 | 0.9716 | 19 |
| 42 | 0.2368 | 0.2438 | 4.1022 | 0.9715 | 18 |
| 43 | 0.2371 | 0.2441 | 4.0970 | 0.9715 | 17 |
| 44 | 0.2374 | 0.2444 | 4.0918 | 0.9714 | 16 |
| 45 | 0.2377 | 0.2447 | 4.0867 | 0.9713 | 15 |
| 46 | 0.2380 | 0.2450 | 4.0815 | 0.9713 | 14 |
| 47 | 0.2383 | 0.2453 | 4.0764 | 0.9712 | 13 |
| 48 | 0.2385 | 0.2456 | 4.0713 | 0.9711 | 12 |
| 49 | 0.2388 | 0.2459 | 4.0662 | 0.9711 | 11 |
| 50 | 0.2391 | 0.2462 | 4.0611 | 0.9710 | 10 |
| 51 | 0.2394 | 0.2465 | 4.0560 | 0.9709 | 9 |
| 52 | 0.2397 | 0.2469 | 4.0509 | 0.9709 | 8 |
| 53 | 0.2399 | 0.2472 | 4.0459 | 0.9708 | 7 |
| 54 | 0.2402 | 0.2475 | 4.0408 | 0.9707 | 6 |
| 55 | 0.2405 | 0.2478 | 4.0358 | 0.9706 | 5 |
| 56 | 0.2408 | 0.2481 | 4.0308 | 0.9706 | 4 |
| 57 | 0.2411 | 0.2484 | 4.0257 | 0.9705 | 3 |
| 58 | 0.2414 | 0.2487 | 4.0207 | 0.9704 | 2 |
| 59 | 0.2416 | 0.2490 | 4.0158 | 0.9704 | 1 |
| 60 | 0.2419 | 0.2493 | 4.0108 | 0.9703 | 0 |
| | Cos | Cot | Tan | Sin | |

*101° 194° *284° 14°

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15° *105° 195° *285°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2419 | 0.2493 | 4.0108 | 0.9703 | 60 |
| 1 | 0.2422 | 0.2496 | 4.0058 | 0.9702 | 59 |
| 2 | 0.2425 | 0.2499 | 4.0009 | 0.9702 | 58 |
| 3 | 0.2428 | 0.2503 | 3.9959 | 0.9701 | 57 |
| 4 | 0.2431 | 0.2506 | 3.9910 | 0.9700 | 56 |
| 5 | 0.2433 | 0.2509 | 3.9861 | 0.9699 | 55 |
| 6 | 0.2436 | 0.2512 | 3.9812 | 0.9699 | 54 |
| 7 | 0.2439 | 0.2515 | 3.9763 | 0.9698 | 53 |
| 8 | 0.2442 | 0.2518 | 3.9714 | 0.9697 | 52 |
| 9 | 0.2445 | 0.2521 | 3.9665 | 0.9697 | 51 |
| 10 | 0.2447 | 0.2524 | 3.9617 | 0.9696 | 50 |
| 11 | 0.2450 | 0.2527 | 3.9568 | 0.9695 | 49 |
| 12 | 0.2453 | 0.2530 | 3.9520 | 0.9694 | 48 |
| 13 | 0.2456 | 0.2533 | 3.9471 | 0.9694 | 47 |
| 14 | 0.2459 | 0.2537 | 3.9423 | 0.9693 | 46 |
| 15 | 0.2462 | 0.2540 | 3.9375 | 0.9692 | 45 |
| 16 | 0.2464 | 0.2543 | 3.9327 | 0.9692 | 44 |
| 17 | 0.2467 | 0.2546 | 3.9279 | 0.9691 | 43 |
| 18 | 0.2470 | 0.2549 | 3.9232 | 0.9690 | 42 |
| 19 | 0.2473 | 0.2552 | 3.9184 | 0.9689 | 41 |
| 20 | 0.2476 | 0.2555 | 3.9136 | 0.9689 | 40 |
| 21 | 0.2478 | 0.2558 | 3.9089 | 0.9688 | 39 |
| 22 | 0.2481 | 0.2561 | 3.9042 | 0.9687 | 38 |
| 23 | 0.2484 | 0.2564 | 3.8995 | 0.9687 | 37 |
| 24 | 0.2487 | 0.2568 | 3.8947 | 0.9686 | 36 |
| 25 | 0.2490 | 0.2571 | 3.8900 | 0.9685 | 35 |
| 26 | 0.2493 | 0.2574 | 3.8854 | 0.9684 | 34 |
| 27 | 0.2495 | 0.2577 | 3.8807 | 0.9684 | 33 |
| 28 | 0.2498 | 0.2580 | 3.8760 | 0.9683 | 32 |
| 29 | 0.2501 | 0.2583 | 3.8714 | 0.9682 | 31 |
| 30 | 0.2504 | 0.2586 | 3.8667 | 0.9681 | 30 |
| 31 | 0.2507 | 0.2589 | 3.8621 | 0.9681 | 29 |
| 32 | 0.2509 | 0.2592 | 3.8575 | 0.9680 | 28 |
| 33 | 0.2512 | 0.2595 | 3.8528 | 0.9679 | 27 |
| 34 | 0.2515 | 0.2599 | 3.8482 | 0.9679 | 26 |
| 35 | 0.2518 | 0.2602 | 3.8436 | 0.9678 | 25 |
| 36 | 0.2521 | 0.2605 | 3.8391 | 0.9677 | 24 |
| 37 | 0.2524 | 0.2608 | 3.8345 | 0.9676 | 23 |
| 38 | 0.2526 | 0.2611 | 3.8299 | 0.9676 | 22 |
| 39 | 0.2529 | 0.2614 | 3.8254 | 0.9675 | 21 |
| 40 | 0.2532 | 0.2617 | 3.8208 | 0.9674 | 20 |
| 41 | 0.2535 | 0.2620 | 3.8163 | 0.9673 | 19 |
| 42 | 0.2538 | 0.2623 | 3.8118 | 0.9673 | 18 |
| 43 | 0.2540 | 0.2627 | 3.8073 | 0.9672 | 17 |
| 44 | 0.2543 | 0.2630 | 3.8028 | 0.9671 | 16 |
| 45 | 0.2546 | 0.2633 | 3.7983 | 0.9670 | 15 |
| 46 | 0.2549 | 0.2636 | 3.7938 | 0.9670 | 14 |
| 47 | 0.2552 | 0.2639 | 3.7893 | 0.9669 | 13 |
| 48 | 0.2554 | 0.2642 | 3.7848 | 0.9668 | 12 |
| 49 | 0.2557 | 0.2645 | 3.7804 | 0.9667 | 11 |
| 50 | 0.2560 | 0.2648 | 3.7760 | 0.9667 | 10 |
| 51 | 0.2563 | 0.2651 | 3.7715 | 0.9666 | 9 |
| 52 | 0.2566 | 0.2655 | 3.7671 | 0.9665 | 8 |
| 53 | 0.2569 | 0.2658 | 3.7627 | 0.9665 | 7 |
| 54 | 0.2571 | 0.2661 | 3.7583 | 0.9664 | 6 |
| 55 | 0.2574 | 0.2664 | 3.7539 | 0.9663 | 5 |
| 56 | 0.2577 | 0.2667 | 3.7495 | 0.9662 | 4 |
| 57 | 0.2580 | 0.2670 | 3.7451 | 0.9662 | 3 |
| 58 | 0.2583 | 0.2673 | 3.7408 | 0.9661 | 2 |
| 59 | 0.2585 | 0.2676 | 3.7364 | 0.9660 | 1 |
| 60 | 0.2588 | 0.2679 | 3.7321 | 0.9659 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2588 | 0.2679 | 3.7321 | 0.9659 | 60 |
| 1 | 0.2591 | 0.2683 | 3.7277 | 0.9659 | 59 |
| 2 | 0.2594 | 0.2686 | 3.7234 | 0.9658 | 58 |
| 3 | 0.2597 | 0.2689 | 3.7191 | 0.9657 | 57 |
| 4 | 0.2599 | 0.2692 | 3.7148 | 0.9656 | 56 |
| 5 | 0.2602 | 0.2695 | 3.7105 | 0.9655 | 55 |
| 6 | 0.2605 | 0.2698 | 3.7062 | 0.9655 | 54 |
| 7 | 0.2608 | 0.2701 | 3.7019 | 0.9654 | 53 |
| 8 | 0.2611 | 0.2704 | 3.6976 | 0.9653 | 52 |
| 9 | 0.2613 | 0.2708 | 3.6933 | 0.9652 | 51 |
| 10 | 0.2616 | 0.2711 | 3.6891 | 0.9652 | 50 |
| 11 | 0.2619 | 0.2714 | 3.6848 | 0.9651 | 49 |
| 12 | 0.2622 | 0.2717 | 3.6806 | 0.9650 | 48 |
| 13 | 0.2625 | 0.2720 | 3.6764 | 0.9649 | 47 |
| 14 | 0.2628 | 0.2723 | 3.6722 | 0.9649 | 46 |
| 15 | 0.2630 | 0.2726 | 3.6680 | 0.9648 | 45 |
| 16 | 0.2633 | 0.2729 | 3.6638 | 0.9647 | 44 |
| 17 | 0.2636 | 0.2733 | 3.6596 | 0.9646 | 43 |
| 18 | 0.2639 | 0.2736 | 3.6554 | 0.9646 | 42 |
| 19 | 0.2642 | 0.2739 | 3.6512 | 0.9645 | 41 |
| 20 | 0.2644 | 0.2742 | 3.6470 | 0.9644 | 40 |
| 21 | 0.2647 | 0.2745 | 3.6429 | 0.9643 | 39 |
| 22 | 0.2650 | 0.2748 | 3.6387 | 0.9642 | 38 |
| 23 | 0.2653 | 0.2751 | 3.6346 | 0.9642 | 37 |
| 24 | 0.2656 | 0.2754 | 3.6305 | 0.9641 | 36 |
| 25 | 0.2658 | 0.2758 | 3.6264 | 0.9640 | 35 |
| 26 | 0.2661 | 0.2761 | 3.6222 | 0.9639 | 34 |
| 27 | 0.2664 | 0.2764 | 3.6181 | 0.9639 | 33 |
| 28 | 0.2667 | 0.2767 | 3.6140 | 0.9638 | 32 |
| 29 | 0.2670 | 0.2770 | 3.6100 | 0.9637 | 31 |
| 30 | 0.2672 | 0.2773 | 3.6059 | 0.9636 | 30 |
| 31 | 0.2675 | 0.2776 | 3.6018 | 0.9636 | 29 |
| 32 | 0.2678 | 0.2780 | 3.5978 | 0.9635 | 28 |
| 33 | 0.2681 | 0.2783 | 3.5937 | 0.9634 | 27 |
| 34 | 0.2684 | 0.2786 | 3.5897 | 0.9633 | 26 |
| 35 | 0.2686 | 0.2789 | 3.5856 | 0.9632 | 25 |
| 36 | 0.2689 | 0.2792 | 3.5816 | 0.9632 | 24 |
| 37 | 0.2692 | 0.2795 | 3.5776 | 0.9631 | 23 |
| 38 | 0.2695 | 0.2798 | 3.5736 | 0.9630 | 22 |
| 39 | 0.2698 | 0.2801 | 3.5696 | 0.9629 | 21 |
| 40 | 0.2700 | 0.2805 | 3.5656 | 0.9628 | 20 |
| 41 | 0.2703 | 0.2808 | 3.5616 | 0.9628 | 19 |
| 42 | 0.2706 | 0.2811 | 3.5576 | 0.9627 | 18 |
| 43 | 0.2709 | 0.2814 | 3.5536 | 0.9626 | 17 |
| 44 | 0.2712 | 0.2817 | 3.5497 | 0.9625 | 16 |
| 45 | 0.2714 | 0.2820 | 3.5457 | 0.9625 | 15 |
| 46 | 0.2717 | 0.2823 | 3.5418 | 0.9624 | 14 |
| 47 | 0.2720 | 0.2827 | 3.5379 | 0.9623 | 13 |
| 48 | 0.2723 | 0.2830 | 3.5339 | 0.9622 | 12 |
| 49 | 0.2726 | 0.2833 | 3.5300 | 0.9621 | 11 |
| 50 | 0.2728 | 0.2836 | 3.5261 | 0.9621 | 10 |
| 51 | 0.2731 | 0.2839 | 3.5222 | 0.9620 | 9 |
| 52 | 0.2734 | 0.2842 | 3.5183 | 0.9619 | 8 |
| 53 | 0.2737 | 0.2845 | 3.5144 | 0.9618 | 7 |
| 54 | 0.2740 | 0.2849 | 3.5105 | 0.9617 | 6 |
| 55 | 0.2742 | 0.2852 | 3.5067 | 0.9617 | 5 |
| 56 | 0.2745 | 0.2855 | 3.5028 | 0.9616 | 4 |
| 57 | 0.2748 | 0.2858 | 3.4989 | 0.9615 | 3 |
| 58 | 0.2751 | 0.2861 | 3.4951 | 0.9614 | 2 |
| 59 | 0.2754 | 0.2864 | 3.4912 | 0.9613 | 1 |
| 60 | 0.2756 | 0.2867 | 3.4874 | 0.9613 | 0 |
| | Cos | Cot | Tan | Sin | |

*165° 255° *345°

75°

NATURAL

74°

*164° 254° *344°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2756 | 0.2867 | 3.4874 | 0.9613 | 60 |
| 1 | 0.2759 | 0.2871 | 3.4836 | 0.9612 | 59 |
| 2 | 0.2762 | 0.2874 | 3.4798 | 0.9611 | 58 |
| 3 | 0.2765 | 0.2877 | 3.4760 | 0.9610 | 57 |
| 4 | 0.2768 | 0.2880 | 3.4722 | 0.9609 | 56 |
| 5 | 0.2770 | 0.2883 | 3.4684 | 0.9609 | 55 |
| 6 | 0.2773 | 0.2886 | 3.4646 | 0.9608 | 54 |
| 7 | 0.2776 | 0.2890 | 3.4608 | 0.9607 | 53 |
| 8 | 0.2779 | 0.2893 | 3.4570 | 0.9606 | 52 |
| 9 | 0.2782 | 0.2896 | 3.4533 | 0.9605 | 51 |
| 10 | 0.2784 | 0.2899 | 3.4495 | 0.9605 | 50 |
| 11 | 0.2787 | 0.2902 | 3.4458 | 0.9604 | 49 |
| 12 | 0.2790 | 0.2905 | 3.4420 | 0.9603 | 48 |
| 13 | 0.2793 | 0.2908 | 3.4383 | 0.9602 | 47 |
| 14 | 0.2795 | 0.2912 | 3.4346 | 0.9601 | 46 |
| 15 | 0.2798 | 0.2915 | 3.4308 | 0.9600 | 45 |
| 16 | 0.2801 | 0.2918 | 3.4271 | 0.9600 | 44 |
| 17 | 0.2804 | 0.2921 | 3.4234 | 0.9599 | 43 |
| 18 | 0.2807 | 0.2924 | 3.4197 | 0.9598 | 42 |
| 19 | 0.2809 | 0.2927 | 3.4160 | 0.9597 | 41 |
| 20 | 0.2812 | 0.2931 | 3.4124 | 0.9596 | 40 |
| 21 | 0.2815 | 0.2934 | 3.4087 | 0.9596 | 39 |
| 22 | 0.2818 | 0.2937 | 3.4050 | 0.9595 | 38 |
| 23 | 0.2821 | 0.2940 | 3.4014 | 0.9594 | 37 |
| 24 | 0.2823 | 0.2943 | 3.3977 | 0.9593 | 36 |
| 25 | 0.2826 | 0.2946 | 3.3941 | 0.9592 | 35 |
| 26 | 0.2829 | 0.2949 | 3.3904 | 0.9591 | 34 |
| 27 | 0.2832 | 0.2953 | 3.3868 | 0.9591 | 33 |
| 28 | 0.2835 | 0.2956 | 3.3832 | 0.9590 | 32 |
| 29 | 0.2837 | 0.2959 | 3.3796 | 0.9589 | 31 |
| 30 | 0.2840 | 0.2962 | 3.3759 | 0.9588 | 30 |
| 31 | 0.2843 | 0.2965 | 3.3723 | 0.9587 | 29 |
| 32 | 0.2846 | 0.2968 | 3.3687 | 0.9587 | 28 |
| 33 | 0.2849 | 0.2972 | 3.3652 | 0.9586 | 27 |
| 34 | 0.2851 | 0.2975 | 3.3616 | 0.9585 | 26 |
| 35 | 0.2854 | 0.2978 | 3.3580 | 0.9584 | 25 |
| 36 | 0.2857 | 0.2981 | 3.3544 | 0.9583 | 24 |
| 37 | 0.2860 | 0.2984 | 3.3509 | 0.9582 | 23 |
| 38 | 0.2862 | 0.2987 | 3.3473 | 0.9582 | 22 |
| 39 | 0.2865 | 0.2991 | 3.3438 | 0.9581 | 21 |
| 40 | 0.2868 | 0.2994 | 3.3402 | 0.9580 | 20 |
| 41 | 0.2871 | 0.2997 | 3.3367 | 0.9579 | 19 |
| 42 | 0.2874 | 0.3000 | 3.3332 | 0.9578 | 18 |
| 43 | 0.2876 | 0.3003 | 3.3297 | 0.9577 | 17 |
| 44 | 0.2879 | 0.3006 | 3.3261 | 0.9577 | 16 |
| 45 | 0.2882 | 0.3010 | 3.3226 | 0.9576 | 15 |
| 46 | 0.2885 | 0.3013 | 3.3191 | 0.9575 | 14 |
| 47 | 0.2888 | 0.3016 | 3.3156 | 0.9574 | 13 |
| 48 | 0.2890 | 0.3019 | 3.3122 | 0.9573 | 12 |
| 49 | 0.2893 | 0.3022 | 3.3087 | 0.9572 | 11 |
| 50 | 0.2896 | 0.3026 | 3.3052 | 0.9572 | 10 |
| 51 | 0.2899 | 0.3029 | 3.3017 | 0.9571 | 9 |
| 52 | 0.2901 | 0.3032 | 3.2983 | 0.9570 | 8 |
| 53 | 0.2904 | 0.3035 | 3.2948 | 0.9569 | 7 |
| 54 | 0.2907 | 0.3038 | 3.2914 | 0.9568 | 6 |
| 55 | 0.2910 | 0.3041 | 3.2879 | 0.9567 | 5 |
| 56 | 0.2913 | 0.3045 | 3.2845 | 0.9566 | 4 |
| 57 | 0.2915 | 0.3048 | 3.2811 | 0.9566 | 3 |
| 58 | 0.2918 | 0.3051 | 3.2777 | 0.9565 | 2 |
| 59 | 0.2921 | 0.3054 | 3.2743 | 0.9564 | 1 |
| 60 | 0.2924 | 0.3057 | 3.2709 | 0.9563 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.2924 | 0.3057 | 3.2709 | 0.9563 | 60 |
| 1 | 0.2926 | 0.3060 | 3.2675 | 0.9562 | 59 |
| 2 | 0.2929 | 0.3064 | 3.2641 | 0.9561 | 58 |
| 3 | 0.2932 | 0.3067 | 3.2607 | 0.9560 | 57 |
| 4 | 0.2935 | 0.3070 | 3.2573 | 0.9560 | 56 |
| 5 | 0.2938 | 0.3073 | 3.2539 | 0.9559 | 55 |
| 6 | 0.2940 | 0.3076 | 3.2506 | 0.9558 | 54 |
| 7 | 0.2943 | 0.3080 | 3.2472 | 0.9557 | 53 |
| 8 | 0.2946 | 0.3083 | 3.2438 | 0.9556 | 52 |
| 9 | 0.2949 | 0.3086 | 3.2405 | 0.9555 | 51 |
| 10 | 0.2952 | 0.3089 | 3.2371 | 0.9555 | 50 |
| 11 | 0.2954 | 0.3092 | 3.2338 | 0.9554 | 49 |
| 12 | 0.2957 | 0.3096 | 3.2305 | 0.9553 | 48 |
| 13 | 0.2960 | 0.3099 | 3.2272 | 0.9552 | 47 |
| 14 | 0.2963 | 0.3102 | 3.2238 | 0.9551 | 46 |
| 15 | 0.2965 | 0.3105 | 3.2205 | 0.9550 | 45 |
| 16 | 0.2968 | 0.3108 | 3.2172 | 0.9549 | 44 |
| 17 | 0.2971 | 0.3111 | 3.2139 | 0.9548 | 43 |
| 18 | 0.2974 | 0.3115 | 3.2106 | 0.9548 | 42 |
| 19 | 0.2977 | 0.3118 | 3.2073 | 0.9547 | 41 |
| 20 | 0.2979 | 0.3121 | 3.2041 | 0.9546 | 40 |
| 21 | 0.2982 | 0.3124 | 3.2008 | 0.9545 | 39 |
| 22 | 0.2985 | 0.3127 | 3.1975 | 0.9544 | 38 |
| 23 | 0.2988 | 0.3131 | 3.1943 | 0.9543 | 37 |
| 24 | 0.2990 | 0.3134 | 3.1910 | 0.9542 | 36 |
| 25 | 0.2993 | 0.3137 | 3.1878 | 0.9542 | 35 |
| 26 | 0.2996 | 0.3140 | 3.1845 | 0.9541 | 34 |
| 27 | 0.2999 | 0.3143 | 3.1813 | 0.9540 | 33 |
| 28 | 0.3002 | 0.3147 | 3.1780 | 0.9539 | 32 |
| 29 | 0.3004 | 0.3150 | 3.1748 | 0.9538 | 31 |
| 30 | 0.3007 | 0.3153 | 3.1716 | 0.9537 | 30 |
| 31 | 0.3010 | 0.3156 | 3.1684 | 0.9536 | 29 |
| 32 | 0.3013 | 0.3159 | 3.1652 | 0.9535 | 28 |
| 33 | 0.3015 | 0.3163 | 3.1620 | 0.9535 | 27 |
| 34 | 0.3018 | 0.3166 | 3.1588 | 0.9534 | 26 |
| 35 | 0.3021 | 0.3169 | 3.1556 | 0.9533 | 25 |
| 36 | 0.3024 | 0.3172 | 3.1524 | 0.9532 | 24 |
| 37 | 0.3026 | 0.3175 | 3.1492 | 0.9531 | 23 |
| 38 | 0.3029 | 0.3179 | 3.1460 | 0.9530 | 22 |
| 39 | 0.3032 | 0.3182 | 3.1429 | 0.9529 | 21 |
| 40 | 0.3035 | 0.3185 | 3.1397 | 0.9528 | 20 |
| 41 | 0.3038 | 0.3188 | 3.1366 | 0.9527 | 19 |
| 42 | 0.3040 | 0.3191 | 3.1334 | 0.9527 | 18 |
| 43 | 0.3043 | 0.3195 | 3.1303 | 0.9526 | 17 |
| 44 | 0.3046 | 0.3198 | 3.1271 | 0.9525 | 16 |
| 45 | 0.3049 | 0.3201 | 3.1240 | 0.9524 | 15 |
| 46 | 0.3051 | 0.3204 | 3.1209 | 0.9523 | 14 |
| 47 | 0.3054 | 0.3207 | 3.1178 | 0.9522 | 13 |
| 48 | 0.3057 | 0.3211 | 3.1146 | 0.9521 | 12 |
| 49 | 0.3060 | 0.3214 | 3.1115 | 0.9520 | 11 |
| 50 | 0.3062 | 0.3217 | 3.1084 | 0.9520 | 10 |
| 51 | 0.3065 | 0.3220 | 3.1053 | 0.9519 | 9 |
| 52 | 0.3068 | 0.3223 | 3.1022 | 0.9518 | 8 |
| 53 | 0.3071 | 0.3227 | 3.0991 | 0.9517 | 7 |
| 54 | 0.3074 | 0.3230 | 3.0961 | 0.9516 | 6 |
| 55 | 0.3076 | 0.3233 | 3.0930 | 0.9515 | 5 |
| 56 | 0.3079 | 0.3236 | 3.0899 | 0.9514 | 4 |
| 57 | 0.3082 | 0.3240 | 3.0868 | 0.9513 | 3 |
| 58 | 0.3085 | 0.3243 | 3.0838 | 0.9512 | 2 |
| 59 | 0.3087 | 0.3246 | 3.0807 | 0.9511 | 1 |
| 60 | 0.3090 | 0.3249 | 3.0777 | 0.9511 | 0 |
| | Cos | Cot | Tan | Sin | |

*108° 198° *288°

18°

NATURAL

19°

*109° 199° *289°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.3090 | 0.3249 | 3.0777 | 0.9511 | 60 |
| 1 | 0.3093 | 0.3252 | 3.0746 | 0.9510 | 59 |
| 2 | 0.3096 | 0.3256 | 3.0716 | 0.9509 | 58 |
| 3 | 0.3098 | 0.3259 | 3.0686 | 0.9508 | 57 |
| 4 | 0.3101 | 0.3262 | 3.0655 | 0.9507 | 56 |
| 5 | 0.3104 | 0.3265 | 3.0625 | 0.9506 | 55 |
| 6 | 0.3107 | 0.3269 | 3.0595 | 0.9505 | 54 |
| 7 | 0.3110 | 0.3272 | 3.0565 | 0.9504 | 53 |
| 8 | 0.3112 | 0.3275 | 3.0535 | 0.9503 | 52 |
| 9 | 0.3115 | 0.3278 | 3.0505 | 0.9502 | 51 |
| 10 | 0.3118 | 0.3281 | 3.0475 | 0.9502 | 50 |
| 11 | 0.3121 | 0.3285 | 3.0445 | 0.9501 | 49 |
| 12 | 0.3123 | 0.3288 | 3.0415 | 0.9500 | 48 |
| 13 | 0.3126 | 0.3291 | 3.0385 | 0.9499 | 47 |
| 14 | 0.3129 | 0.3294 | 3.0356 | 0.9498 | 46 |
| 15 | 0.3132 | 0.3298 | 3.0326 | 0.9497 | 45 |
| 16 | 0.3134 | 0.3301 | 3.0296 | 0.9496 | 44 |
| 17 | 0.3137 | 0.3304 | 3.0267 | 0.9495 | 43 |
| 18 | 0.3140 | 0.3307 | 3.0237 | 0.9494 | 42 |
| 19 | 0.3143 | 0.3310 | 3.0208 | 0.9493 | 41 |
| 20 | 0.3145 | 0.3314 | 3.0178 | 0.9492 | 40 |
| 21 | 0.3148 | 0.3317 | 3.0149 | 0.9492 | 39 |
| 22 | 0.3151 | 0.3320 | 3.0120 | 0.9491 | 38 |
| 23 | 0.3154 | 0.3323 | 3.0090 | 0.9490 | 37 |
| 24 | 0.3156 | 0.3327 | 3.0061 | 0.9489 | 36 |
| 25 | 0.3159 | 0.3330 | 3.0032 | 0.9488 | 35 |
| 26 | 0.3162 | 0.3333 | 3.0003 | 0.9487 | 34 |
| 27 | 0.3165 | 0.3336 | 2.9974 | 0.9486 | 33 |
| 28 | 0.3168 | 0.3339 | 2.9945 | 0.9485 | 32 |
| 29 | 0.3170 | 0.3343 | 2.9916 | 0.9484 | 31 |
| 30 | 0.3173 | 0.3346 | 2.9887 | 0.9483 | 30 |
| 31 | 0.3176 | 0.3349 | 2.9858 | 0.9482 | 29 |
| 32 | 0.3179 | 0.3352 | 2.9829 | 0.9481 | 28 |
| 33 | 0.3181 | 0.3356 | 2.9800 | 0.9480 | 27 |
| 34 | 0.3184 | 0.3359 | 2.9772 | 0.9480 | 26 |
| 35 | 0.3187 | 0.3362 | 2.9743 | 0.9479 | 25 |
| 36 | 0.3190 | 0.3365 | 2.9714 | 0.9478 | 24 |
| 37 | 0.3192 | 0.3369 | 2.9686 | 0.9477 | 23 |
| 38 | 0.3195 | 0.3372 | 2.9657 | 0.9476 | 22 |
| 39 | 0.3198 | 0.3375 | 2.9629 | 0.9475 | 21 |
| 40 | 0.3201 | 0.3378 | 2.9600 | 0.9474 | 20 |
| 41 | 0.3203 | 0.3382 | 2.9572 | 0.9473 | 19 |
| 42 | 0.3206 | 0.3385 | 2.9544 | 0.9472 | 18 |
| 43 | 0.3209 | 0.3388 | 2.9515 | 0.9471 | 17 |
| 44 | 0.3212 | 0.3391 | 2.9487 | 0.9470 | 16 |
| 45 | 0.3214 | 0.3395 | 2.9459 | 0.9469 | 15 |
| 46 | 0.3217 | 0.3398 | 2.9431 | 0.9468 | 14 |
| 47 | 0.3220 | 0.3401 | 2.9403 | 0.9467 | 13 |
| 48 | 0.3223 | 0.3404 | 2.9375 | 0.9466 | 12 |
| 49 | 0.3225 | 0.3408 | 2.9347 | 0.9466 | 11 |
| 50 | 0.3228 | 0.3411 | 2.9319 | 0.9465 | 10 |
| 51 | 0.3231 | 0.3414 | 2.9291 | 0.9464 | 9 |
| 52 | 0.3234 | 0.3417 | 2.9263 | 0.9463 | 8 |
| 53 | 0.3236 | 0.3421 | 2.9235 | 0.9462 | 7 |
| 54 | 0.3239 | 0.3424 | 2.9208 | 0.9461 | 6 |
| 55 | 0.3242 | 0.3427 | 2.9180 | 0.9460 | 5 |
| 56 | 0.3245 | 0.3430 | 2.9152 | 0.9459 | 4 |
| 57 | 0.3247 | 0.3434 | 2.9125 | 0.9458 | 3 |
| 58 | 0.3250 | 0.3437 | 2.9097 | 0.9457 | 2 |
| 59 | 0.3253 | 0.3440 | 2.9070 | 0.9456 | 1 |
| 60 | 0.3256 | 0.3443 | 2.9042 | 0.9455 | 0 |
| | Cos | Cot | Tan | Sin | |

*161° 251° *341°

71°

NATURAL

70°

*160° 250° *340°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.3256 | 0.3443 | 2.9042 | 0.9455 | 60 |
| 1 | 0.3258 | 0.3447 | 2.9015 | 0.9454 | 59 |
| 2 | 0.3261 | 0.3450 | 2.8987 | 0.9453 | 58 |
| 3 | 0.3264 | 0.3453 | 2.8960 | 0.9452 | 57 |
| 4 | 0.3267 | 0.3456 | 2.8933 | 0.9451 | 56 |
| 5 | 0.3269 | 0.3460 | 2.8905 | 0.9450 | 55 |
| 6 | 0.3272 | 0.3463 | 2.8878 | 0.9449 | 54 |
| 7 | 0.3275 | 0.3466 | 2.8851 | 0.9449 | 53 |
| 8 | 0.3278 | 0.3469 | 2.8824 | 0.9448 | 52 |
| 9 | 0.3280 | 0.3473 | 2.8797 | 0.9447 | 51 |
| 10 | 0.3283 | 0.3476 | 2.8770 | 0.9446 | 50 |
| 11 | 0.3286 | 0.3479 | 2.8743 | 0.9445 | 49 |
| 12 | 0.3289 | 0.3482 | 2.8716 | 0.9444 | 48 |
| 13 | 0.3291 | 0.3486 | 2.8689 | 0.9443 | 47 |
| 14 | 0.3294 | 0.3489 | 2.8662 | 0.9442 | 46 |
| 15 | 0.3297 | 0.3492 | 2.8636 | 0.9441 | 45 |
| 16 | 0.3300 | 0.3495 | 2.8609 | 0.9440 | 44 |
| 17 | 0.3302 | 0.3499 | 2.8582 | 0.9439 | 43 |
| 18 | 0.3305 | 0.3502 | 2.8556 | 0.9438 | 42 |
| 19 | 0.3308 | 0.3505 | 2.8529 | 0.9437 | 41 |
| 20 | 0.3311 | 0.3508 | 2.8502 | 0.9436 | 40 |
| 21 | 0.3313 | 0.3512 | 2.8476 | 0.9435 | 39 |
| 22 | 0.3316 | 0.3515 | 2.8449 | 0.9434 | 38 |
| 23 | 0.3319 | 0.3518 | 2.8423 | 0.9433 | 37 |
| 24 | 0.3322 | 0.3522 | 2.8397 | 0.9432 | 36 |
| 25 | 0.3324 | 0.3525 | 2.8370 | 0.9431 | 35 |
| 26 | 0.3327 | 0.3528 | 2.8344 | 0.9430 | 34 |
| 27 | 0.3330 | 0.3531 | 2.8318 | 0.9429 | 33 |
| 28 | 0.3333 | 0.3535 | 2.8291 | 0.9428 | 32 |
| 29 | 0.3335 | 0.3538 | 2.8265 | 0.9427 | 31 |
| 30 | 0.3338 | 0.3541 | 2.8239 | 0.9426 | 30 |
| 31 | 0.3341 | 0.3544 | 2.8213 | 0.9425 | 29 |
| 32 | 0.3344 | 0.3548 | 2.8187 | 0.9424 | 28 |
| 33 | 0.3346 | 0.3551 | 2.8161 | 0.9423 | 27 |
| 34 | 0.3349 | 0.3554 | 2.8135 | 0.9423 | 26 |
| 35 | 0.3352 | 0.3558 | 2.8109 | 0.9422 | 25 |
| 36 | 0.3355 | 0.3561 | 2.8083 | 0.9421 | 24 |
| 37 | 0.3357 | 0.3564 | 2.8057 | 0.9420 | 23 |
| 38 | 0.3360 | 0.3567 | 2.8032 | 0.9419 | 22 |
| 39 | 0.3363 | 0.3571 | 2.8006 | 0.9418 | 21 |
| 40 | 0.3365 | 0.3574 | 2.7980 | 0.9417 | 20 |
| 41 | 0.3368 | 0.3577 | 2.7955 | 0.9416 | 19 |
| 42 | 0.3371 | 0.3581 | 2.7929 | 0.9415 | 18 |
| 43 | 0.3374 | 0.3584 | 2.7903 | 0.9414 | 17 |
| 44 | 0.3377 | 0.3587 | 2.7878 | 0.9413 | 16 |
| 45 | 0.3379 | 0.3590 | 2.7852 | 0.9412 | 15 |
| 46 | 0.3382 | 0.3594 | 2.7827 | 0.9411 | 14 |
| 47 | 0.3385 | 0.3597 | 2.7801 | 0.9410 | 13 |
| 48 | 0.3387 | 0.3600 | 2.7776 | 0.9409 | 12 |
| 49 | 0.3390 | 0.3604 | 2.7751 | 0.9408 | 11 |
| 50 | 0.3393 | 0.3607 | 2.7725 | 0.9407 | 10 |
| 51 | 0.3396 | 0.3610 | 2.7700 | 0.9406 | 9 |
| 52 | 0.3398 | 0.3613 | 2.7675 | 0.9405 | 8 |
| 53 | 0.3401 | 0.3617 | 2.7650 | 0.9404 | 7 |
| 54 | 0.3404 | 0.3620 | 2.7625 | 0.9403 | 6 |
| 55 | 0.3407 | 0.3623 | 2.7600 | 0.9402 | 5 |
| 56 | 0.3409 | 0.3627 | 2.7575 | 0.9401 | 4 |
| 57 | 0.3412 | 0.3630 | 2.7550 | 0.9400 | 3 |
| 58 | 0.3415 | 0.3633 | 2.7525 | 0.9399 | 2 |
| 59 | 0.3417 | 0.3636 | 2.7500 | 0.9398 | 1 |
| 60 | 0.3420 | 0.3640 | 2.7475 | 0.9397 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|-----|--------|--------|--------|--------|----|
| 0 | 0.3420 | 0.3040 | 2.7475 | 0.9397 | 60 |
| 1 | 0.3423 | 0.3043 | 2.7450 | 0.9396 | 59 |
| 2 | 0.3426 | 0.3046 | 2.7425 | 0.9395 | 58 |
| 3 | 0.3428 | 0.3050 | 2.7400 | 0.9394 | 57 |
| 4 | 0.3431 | 0.3053 | 2.7376 | 0.9393 | 56 |
| 5 | 0.3434 | 0.3056 | 2.7351 | 0.9392 | 55 |
| 6 | 0.3437 | 0.3059 | 2.7326 | 0.9391 | 54 |
| 7 | 0.3439 | 0.3063 | 2.7302 | 0.9390 | 53 |
| 8 | 0.3442 | 0.3066 | 2.7277 | 0.9389 | 52 |
| 9 | 0.3445 | 0.3069 | 2.7253 | 0.9388 | 51 |
| 10 | 0.3448 | 0.3073 | 2.7228 | 0.9387 | 50 |
| 11 | 0.3450 | 0.3076 | 2.7204 | 0.9386 | 49 |
| 12 | 0.3453 | 0.3079 | 2.7179 | 0.9385 | 48 |
| 13 | 0.3456 | 0.3083 | 2.7155 | 0.9384 | 47 |
| 14 | 0.3458 | 0.3086 | 2.7130 | 0.9383 | 46 |
| 15 | 0.3461 | 0.3089 | 2.7106 | 0.9382 | 45 |
| 16 | 0.3464 | 0.3093 | 2.7082 | 0.9381 | 44 |
| 17 | 0.3467 | 0.3096 | 2.7058 | 0.9380 | 43 |
| 18 | 0.3469 | 0.3099 | 2.7034 | 0.9379 | 42 |
| 19 | 0.3472 | 0.3702 | 2.7009 | 0.9378 | 41 |
| 20 | 0.3475 | 0.3706 | 2.6985 | 0.9377 | 40 |
| 21 | 0.3478 | 0.3709 | 2.6961 | 0.9376 | 39 |
| 22 | 0.3480 | 0.3712 | 2.6937 | 0.9375 | 38 |
| 23 | 0.3483 | 0.3716 | 2.6913 | 0.9374 | 37 |
| 24 | 0.3486 | 0.3719 | 2.6889 | 0.9373 | 36 |
| 25 | 0.3488 | 0.3722 | 2.6865 | 0.9372 | 35 |
| 26 | 0.3491 | 0.3726 | 2.6841 | 0.9371 | 34 |
| 27 | 0.3494 | 0.3729 | 2.6818 | 0.9370 | 33 |
| 28 | 0.3497 | 0.3732 | 2.6794 | 0.9369 | 32 |
| 29 | 0.3499 | 0.3736 | 2.6770 | 0.9368 | 31 |
| 30 | 0.3502 | 0.3739 | 2.6746 | 0.9367 | 30 |
| 31 | 0.3505 | 0.3742 | 2.6723 | 0.9366 | 29 |
| 32 | 0.3508 | 0.3745 | 2.6699 | 0.9365 | 28 |
| 33 | 0.3510 | 0.3749 | 2.6675 | 0.9364 | 27 |
| 34 | 0.3513 | 0.3752 | 2.6652 | 0.9363 | 26 |
| 35 | 0.3516 | 0.3755 | 2.6628 | 0.9362 | 25 |
| 36 | 0.3518 | 0.3759 | 2.6605 | 0.9361 | 24 |
| 37 | 0.3521 | 0.3762 | 2.6581 | 0.9360 | 23 |
| 38 | 0.3524 | 0.3765 | 2.6558 | 0.9359 | 22 |
| 39 | 0.3527 | 0.3769 | 2.6534 | 0.9358 | 21 |
| 40 | 0.3529 | 0.3772 | 2.6511 | 0.9356 | 20 |
| 41 | 0.3532 | 0.3775 | 2.6488 | 0.9355 | 19 |
| 42 | 0.3535 | 0.3779 | 2.6464 | 0.9354 | 18 |
| 43 | 0.3537 | 0.3782 | 2.6441 | 0.9353 | 17 |
| 44 | 0.3540 | 0.3785 | 2.6418 | 0.9352 | 16 |
| 45 | 0.3543 | 0.3789 | 2.6395 | 0.9351 | 15 |
| 46 | 0.3546 | 0.3792 | 2.6371 | 0.9350 | 14 |
| 47 | 0.3548 | 0.3795 | 2.6348 | 0.9349 | 13 |
| 48 | 0.3551 | 0.3799 | 2.6325 | 0.9348 | 12 |
| 49 | 0.3554 | 0.3802 | 2.6302 | 0.9347 | 11 |
| 50 | 0.3557 | 0.3805 | 2.6279 | 0.9346 | 10 |
| 51 | 0.3559 | 0.3809 | 2.6256 | 0.9345 | 9 |
| 52 | 0.3562 | 0.3812 | 2.6233 | 0.9344 | 8 |
| 53 | 0.3565 | 0.3815 | 2.6210 | 0.9343 | 7 |
| 54 | 0.3567 | 0.3819 | 2.6187 | 0.9342 | 6 |
| 55 | 0.3570 | 0.3822 | 2.6165 | 0.9341 | 5 |
| 56 | 0.3573 | 0.3825 | 2.6142 | 0.9340 | 4 |
| 57 | 0.3576 | 0.3829 | 2.6119 | 0.9339 | 3 |
| 58 | 0.3578 | 0.3832 | 2.6096 | 0.9338 | 2 |
| 59 | 0.3581 | 0.3835 | 2.6074 | 0.9337 | 1 |
| 60 | 0.3584 | 0.3839 | 2.6051 | 0.9336 | 0 |
| Cos | Cot | Tan | Sin | | |

| | Sin | Tan | Cot | Cos | |
|-----|--------|--------|--------|--------|----|
| 0 | 0.3584 | 0.3839 | 2.6051 | 0.9336 | 60 |
| 1 | 0.3586 | 0.3842 | 2.6028 | 0.9335 | 59 |
| 2 | 0.3589 | 0.3845 | 2.6006 | 0.9334 | 58 |
| 3 | 0.3592 | 0.3849 | 2.5983 | 0.9333 | 57 |
| 4 | 0.3595 | 0.3852 | 2.5961 | 0.9332 | 56 |
| 5 | 0.3597 | 0.3855 | 2.5938 | 0.9331 | 55 |
| 6 | 0.3600 | 0.3859 | 2.5916 | 0.9330 | 54 |
| 7 | 0.3603 | 0.3862 | 2.5893 | 0.9328 | 53 |
| 8 | 0.3605 | 0.3865 | 2.5871 | 0.9327 | 52 |
| 9 | 0.3608 | 0.3869 | 2.5848 | 0.9326 | 51 |
| 10 | 0.3611 | 0.3872 | 2.5826 | 0.9325 | 50 |
| 11 | 0.3614 | 0.3875 | 2.5804 | 0.9324 | 49 |
| 12 | 0.3616 | 0.3879 | 2.5782 | 0.9323 | 48 |
| 13 | 0.3619 | 0.3882 | 2.5759 | 0.9322 | 47 |
| 14 | 0.3622 | 0.3885 | 2.5737 | 0.9321 | 46 |
| 15 | 0.3624 | 0.3889 | 2.5715 | 0.9320 | 45 |
| 16 | 0.3627 | 0.3892 | 2.5693 | 0.9319 | 44 |
| 17 | 0.3630 | 0.3895 | 2.5671 | 0.9318 | 43 |
| 18 | 0.3633 | 0.3899 | 2.5649 | 0.9317 | 42 |
| 19 | 0.3635 | 0.3902 | 2.5627 | 0.9316 | 41 |
| 20 | 0.3638 | 0.3906 | 2.5605 | 0.9315 | 40 |
| 21 | 0.3641 | 0.3909 | 2.5583 | 0.9314 | 39 |
| 22 | 0.3643 | 0.3912 | 2.5561 | 0.9313 | 38 |
| 23 | 0.3646 | 0.3916 | 2.5539 | 0.9312 | 37 |
| 24 | 0.3649 | 0.3919 | 2.5517 | 0.9311 | 36 |
| 25 | 0.3651 | 0.3922 | 2.5495 | 0.9309 | 35 |
| 26 | 0.3654 | 0.3926 | 2.5473 | 0.9308 | 34 |
| 27 | 0.3657 | 0.3929 | 2.5452 | 0.9307 | 33 |
| 28 | 0.3660 | 0.3932 | 2.5430 | 0.9306 | 32 |
| 29 | 0.3662 | 0.3936 | 2.5408 | 0.9305 | 31 |
| 30 | 0.3665 | 0.3939 | 2.5386 | 0.9304 | 30 |
| 31 | 0.3668 | 0.3942 | 2.5365 | 0.9303 | 29 |
| 32 | 0.3670 | 0.3946 | 2.5343 | 0.9302 | 28 |
| 33 | 0.3673 | 0.3949 | 2.5322 | 0.9301 | 27 |
| 34 | 0.3676 | 0.3953 | 2.5300 | 0.9300 | 26 |
| 35 | 0.3679 | 0.3956 | 2.5279 | 0.9299 | 25 |
| 36 | 0.3681 | 0.3959 | 2.5257 | 0.9298 | 24 |
| 37 | 0.3684 | 0.3963 | 2.5236 | 0.9297 | 23 |
| 38 | 0.3687 | 0.3966 | 2.5214 | 0.9296 | 22 |
| 39 | 0.3689 | 0.3969 | 2.5193 | 0.9295 | 21 |
| 40 | 0.3692 | 0.3973 | 2.5172 | 0.9293 | 20 |
| 41 | 0.3695 | 0.3976 | 2.5150 | 0.9292 | 19 |
| 42 | 0.3697 | 0.3979 | 2.5129 | 0.9291 | 18 |
| 43 | 0.3700 | 0.3983 | 2.5108 | 0.9290 | 17 |
| 44 | 0.3703 | 0.3986 | 2.5086 | 0.9289 | 16 |
| 45 | 0.3706 | 0.3990 | 2.5065 | 0.9288 | 15 |
| 46 | 0.3708 | 0.3993 | 2.5044 | 0.9287 | 14 |
| 47 | 0.3711 | 0.3996 | 2.5023 | 0.9286 | 13 |
| 48 | 0.3714 | 0.4000 | 2.5002 | 0.9285 | 12 |
| 49 | 0.3716 | 0.4003 | 2.4981 | 0.9284 | 11 |
| 50 | 0.3719 | 0.4006 | 2.4960 | 0.9283 | 10 |
| 51 | 0.3722 | 0.4010 | 2.4939 | 0.9282 | 9 |
| 52 | 0.3724 | 0.4013 | 2.4918 | 0.9281 | 8 |
| 53 | 0.3727 | 0.4017 | 2.4897 | 0.9279 | 7 |
| 54 | 0.3730 | 0.4020 | 2.4876 | 0.9278 | 6 |
| 55 | 0.3733 | 0.4023 | 2.4855 | 0.9277 | 5 |
| 56 | 0.3735 | 0.4027 | 2.4834 | 0.9276 | 4 |
| 57 | 0.3738 | 0.4030 | 2.4813 | 0.9275 | 3 |
| 58 | 0.3741 | 0.4033 | 2.4792 | 0.9274 | 2 |
| 59 | 0.3743 | 0.4037 | 2.4772 | 0.9273 | 1 |
| 60 | 0.3746 | 0.4040 | 2.4751 | 0.9272 | 0 |
| Cos | Cot | Tan | Sin | | |

*112° 202° *292°

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NATURAL

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*113° 203° *293°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.3746 | 0.4040 | 2.4751 | 0.9272 | 60 |
| 1 | 0.3749 | 0.4044 | 2.4730 | 0.9271 | 59 |
| 2 | 0.3751 | 0.4047 | 2.4709 | 0.9270 | 58 |
| 3 | 0.3754 | 0.4050 | 2.4689 | 0.9269 | 57 |
| 4 | 0.3757 | 0.4054 | 2.4668 | 0.9267 | 56 |
| 5 | 0.3760 | 0.4057 | 2.4648 | 0.9266 | 55 |
| 6 | 0.3762 | 0.4061 | 2.4627 | 0.9265 | 54 |
| 7 | 0.3765 | 0.4064 | 2.4606 | 0.9264 | 53 |
| 8 | 0.3768 | 0.4067 | 2.4586 | 0.9263 | 52 |
| 9 | 0.3770 | 0.4071 | 2.4566 | 0.9262 | 51 |
| 10 | 0.3773 | 0.4074 | 2.4545 | 0.9261 | 50 |
| 11 | 0.3776 | 0.4078 | 2.4525 | 0.9260 | 49 |
| 12 | 0.3778 | 0.4081 | 2.4504 | 0.9259 | 48 |
| 13 | 0.3781 | 0.4084 | 2.4484 | 0.9258 | 47 |
| 14 | 0.3784 | 0.4088 | 2.4464 | 0.9257 | 46 |
| 15 | 0.3786 | 0.4091 | 2.4443 | 0.9255 | 45 |
| 16 | 0.3789 | 0.4095 | 2.4423 | 0.9254 | 44 |
| 17 | 0.3792 | 0.4098 | 2.4403 | 0.9253 | 43 |
| 18 | 0.3795 | 0.4101 | 2.4383 | 0.9252 | 42 |
| 19 | 0.3797 | 0.4105 | 2.4362 | 0.9251 | 41 |
| 20 | 0.3800 | 0.4108 | 2.4342 | 0.9250 | 40 |
| 21 | 0.3803 | 0.4111 | 2.4322 | 0.9249 | 39 |
| 22 | 0.3805 | 0.4115 | 2.4302 | 0.9248 | 38 |
| 23 | 0.3808 | 0.4118 | 2.4282 | 0.9247 | 37 |
| 24 | 0.3811 | 0.4122 | 2.4262 | 0.9245 | 36 |
| 25 | 0.3813 | 0.4125 | 2.4242 | 0.9244 | 35 |
| 26 | 0.3816 | 0.4129 | 2.4222 | 0.9243 | 34 |
| 27 | 0.3819 | 0.4132 | 2.4202 | 0.9242 | 33 |
| 28 | 0.3821 | 0.4135 | 2.4182 | 0.9241 | 32 |
| 29 | 0.3824 | 0.4139 | 2.4162 | 0.9240 | 31 |
| 30 | 0.3827 | 0.4142 | 2.4142 | 0.9239 | 30 |
| 31 | 0.3830 | 0.4146 | 2.4122 | 0.9238 | 29 |
| 32 | 0.3832 | 0.4149 | 2.4102 | 0.9237 | 28 |
| 33 | 0.3835 | 0.4152 | 2.4083 | 0.9235 | 27 |
| 34 | 0.3838 | 0.4156 | 2.4063 | 0.9234 | 26 |
| 35 | 0.3840 | 0.4159 | 2.4043 | 0.9233 | 25 |
| 36 | 0.3843 | 0.4163 | 2.4023 | 0.9232 | 24 |
| 37 | 0.3846 | 0.4166 | 2.4004 | 0.9231 | 23 |
| 38 | 0.3848 | 0.4169 | 2.3984 | 0.9230 | 22 |
| 39 | 0.3851 | 0.4173 | 2.3964 | 0.9229 | 21 |
| 40 | 0.3854 | 0.4176 | 2.3945 | 0.9228 | 20 |
| 41 | 0.3856 | 0.4180 | 2.3925 | 0.9227 | 19 |
| 42 | 0.3859 | 0.4183 | 2.3906 | 0.9225 | 18 |
| 43 | 0.3862 | 0.4187 | 2.3886 | 0.9224 | 17 |
| 44 | 0.3864 | 0.4190 | 2.3867 | 0.9223 | 16 |
| 45 | 0.3867 | 0.4193 | 2.3847 | 0.9222 | 15 |
| 46 | 0.3870 | 0.4197 | 2.3828 | 0.9221 | 14 |
| 47 | 0.3872 | 0.4200 | 2.3808 | 0.9220 | 13 |
| 48 | 0.3875 | 0.4204 | 2.3789 | 0.9219 | 12 |
| 49 | 0.3878 | 0.4207 | 2.3770 | 0.9218 | 11 |
| 50 | 0.3881 | 0.4210 | 2.3750 | 0.9216 | 10 |
| 51 | 0.3883 | 0.4214 | 2.3731 | 0.9215 | 9 |
| 52 | 0.3886 | 0.4217 | 2.3712 | 0.9214 | 8 |
| 53 | 0.3889 | 0.4221 | 2.3693 | 0.9213 | 7 |
| 54 | 0.3891 | 0.4224 | 2.3673 | 0.9212 | 6 |
| 55 | 0.3894 | 0.4228 | 2.3654 | 0.9211 | 5 |
| 56 | 0.3897 | 0.4231 | 2.3635 | 0.9210 | 4 |
| 57 | 0.3899 | 0.4234 | 2.3616 | 0.9208 | 3 |
| 58 | 0.3902 | 0.4238 | 2.3597 | 0.9207 | 2 |
| 59 | 0.3905 | 0.4241 | 2.3578 | 0.9206 | 1 |
| 60 | 0.3907 | 0.4245 | 2.3559 | 0.9205 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.3907 | 0.4245 | 2.3559 | 0.9205 | 60 |
| 1 | 0.3910 | 0.4248 | 2.3539 | 0.9204 | 59 |
| 2 | 0.3913 | 0.4252 | 2.3520 | 0.9203 | 58 |
| 3 | 0.3915 | 0.4255 | 2.3501 | 0.9202 | 57 |
| 4 | 0.3918 | 0.4258 | 2.3483 | 0.9200 | 56 |
| 5 | 0.3921 | 0.4262 | 2.3464 | 0.9199 | 55 |
| 6 | 0.3923 | 0.4265 | 2.3445 | 0.9198 | 54 |
| 7 | 0.3926 | 0.4269 | 2.3426 | 0.9197 | 53 |
| 8 | 0.3929 | 0.4272 | 2.3407 | 0.9196 | 52 |
| 9 | 0.3931 | 0.4276 | 2.3388 | 0.9195 | 51 |
| 10 | 0.3934 | 0.4279 | 2.3369 | 0.9194 | 50 |
| 11 | 0.3937 | 0.4283 | 2.3351 | 0.9192 | 49 |
| 12 | 0.3939 | 0.4286 | 2.3332 | 0.9191 | 48 |
| 13 | 0.3942 | 0.4289 | 2.3313 | 0.9190 | 47 |
| 14 | 0.3945 | 0.4293 | 2.3294 | 0.9189 | 46 |
| 15 | 0.3947 | 0.4296 | 2.3276 | 0.9188 | 45 |
| 16 | 0.3950 | 0.4300 | 2.3257 | 0.9187 | 44 |
| 17 | 0.3953 | 0.4303 | 2.3238 | 0.9186 | 43 |
| 18 | 0.3955 | 0.4307 | 2.3220 | 0.9184 | 42 |
| 19 | 0.3958 | 0.4310 | 2.3201 | 0.9183 | 41 |
| 20 | 0.3961 | 0.4314 | 2.3183 | 0.9182 | 40 |
| 21 | 0.3963 | 0.4317 | 2.3164 | 0.9181 | 39 |
| 22 | 0.3966 | 0.4320 | 2.3146 | 0.9180 | 38 |
| 23 | 0.3969 | 0.4324 | 2.3127 | 0.9179 | 37 |
| 24 | 0.3971 | 0.4327 | 2.3109 | 0.9178 | 36 |
| 25 | 0.3974 | 0.4331 | 2.3090 | 0.9176 | 35 |
| 26 | 0.3977 | 0.4334 | 2.3072 | 0.9175 | 34 |
| 27 | 0.3979 | 0.4338 | 2.3053 | 0.9174 | 33 |
| 28 | 0.3982 | 0.4341 | 2.3035 | 0.9173 | 32 |
| 29 | 0.3985 | 0.4345 | 2.3017 | 0.9172 | 31 |
| 30 | 0.3987 | 0.4348 | 2.2998 | 0.9171 | 30 |
| 31 | 0.3990 | 0.4352 | 2.2980 | 0.9169 | 29 |
| 32 | 0.3993 | 0.4355 | 2.2962 | 0.9168 | 28 |
| 33 | 0.3995 | 0.4359 | 2.2944 | 0.9167 | 27 |
| 34 | 0.3998 | 0.4362 | 2.2925 | 0.9166 | 26 |
| 35 | 0.4001 | 0.4365 | 2.2907 | 0.9165 | 25 |
| 36 | 0.4003 | 0.4369 | 2.2889 | 0.9164 | 24 |
| 37 | 0.4006 | 0.4372 | 2.2871 | 0.9162 | 23 |
| 38 | 0.4009 | 0.4376 | 2.2853 | 0.9161 | 22 |
| 39 | 0.4011 | 0.4379 | 2.2835 | 0.9160 | 21 |
| 40 | 0.4014 | 0.4383 | 2.2817 | 0.9159 | 20 |
| 41 | 0.4017 | 0.4386 | 2.2799 | 0.9158 | 19 |
| 42 | 0.4019 | 0.4390 | 2.2781 | 0.9157 | 18 |
| 43 | 0.4022 | 0.4393 | 2.2763 | 0.9155 | 17 |
| 44 | 0.4025 | 0.4397 | 2.2745 | 0.9154 | 16 |
| 45 | 0.4027 | 0.4400 | 2.2727 | 0.9153 | 15 |
| 46 | 0.4030 | 0.4404 | 2.2709 | 0.9152 | 14 |
| 47 | 0.4033 | 0.4407 | 2.2691 | 0.9151 | 13 |
| 48 | 0.4035 | 0.4411 | 2.2673 | 0.9150 | 12 |
| 49 | 0.4038 | 0.4414 | 2.2655 | 0.9148 | 11 |
| 50 | 0.4041 | 0.4417 | 2.2637 | 0.9147 | 10 |
| 51 | 0.4043 | 0.4421 | 2.2620 | 0.9146 | 9 |
| 52 | 0.4046 | 0.4424 | 2.2602 | 0.9145 | 8 |
| 53 | 0.4049 | 0.4428 | 2.2584 | 0.9144 | 7 |
| 54 | 0.4051 | 0.4431 | 2.2566 | 0.9143 | 6 |
| 55 | 0.4054 | 0.4435 | 2.2549 | 0.9141 | 5 |
| 56 | 0.4057 | 0.4438 | 2.2531 | 0.9140 | 4 |
| 57 | 0.4059 | 0.4442 | 2.2513 | 0.9139 | 3 |
| 58 | 0.4062 | 0.4445 | 2.2496 | 0.9138 | 2 |
| 59 | 0.4065 | 0.4449 | 2.2478 | 0.9137 | 1 |
| 60 | 0.4067 | 0.4452 | 2.2460 | 0.9135 | 0 |
| | Cos | Cot | Tan | Sin | |

*157° 247° *337°

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NATURAL

66°

*156° 246° *336°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4067 | 0.4452 | 2.2460 | 0.9135 | 60 |
| 1 | 0.4070 | 0.4456 | 2.2443 | 0.9134 | 59 |
| 2 | 0.4073 | 0.4459 | 2.2425 | 0.9133 | 58 |
| 3 | 0.4075 | 0.4463 | 2.2408 | 0.9132 | 57 |
| 4 | 0.4078 | 0.4466 | 2.2390 | 0.9131 | 56 |
| 5 | 0.4081 | 0.4470 | 2.2373 | 0.9130 | 55 |
| 6 | 0.4083 | 0.4473 | 2.2355 | 0.9128 | 54 |
| 7 | 0.4086 | 0.4477 | 2.2338 | 0.9127 | 53 |
| 8 | 0.4089 | 0.4480 | 2.2320 | 0.9126 | 52 |
| 9 | 0.4091 | 0.4484 | 2.2303 | 0.9125 | 51 |
| 10 | 0.4094 | 0.4487 | 2.2286 | 0.9124 | 50 |
| 11 | 0.4097 | 0.4491 | 2.2268 | 0.9122 | 49 |
| 12 | 0.4099 | 0.4494 | 2.2251 | 0.9121 | 48 |
| 13 | 0.4102 | 0.4498 | 2.2234 | 0.9120 | 47 |
| 14 | 0.4105 | 0.4501 | 2.2216 | 0.9119 | 46 |
| 15 | 0.4107 | 0.4505 | 2.2199 | 0.9118 | 45 |
| 16 | 0.4110 | 0.4508 | 2.2182 | 0.9116 | 44 |
| 17 | 0.4112 | 0.4512 | 2.2165 | 0.9115 | 43 |
| 18 | 0.4115 | 0.4515 | 2.2148 | 0.9114 | 42 |
| 19 | 0.4118 | 0.4519 | 2.2130 | 0.9113 | 41 |
| 20 | 0.4120 | 0.4522 | 2.2113 | 0.9112 | 40 |
| 21 | 0.4123 | 0.4526 | 2.2096 | 0.9110 | 39 |
| 22 | 0.4126 | 0.4529 | 2.2079 | 0.9109 | 38 |
| 23 | 0.4128 | 0.4533 | 2.2062 | 0.9108 | 37 |
| 24 | 0.4131 | 0.4536 | 2.2045 | 0.9107 | 36 |
| 25 | 0.4134 | 0.4540 | 2.2028 | 0.9106 | 35 |
| 26 | 0.4136 | 0.4543 | 2.2011 | 0.9104 | 34 |
| 27 | 0.4139 | 0.4547 | 2.1994 | 0.9103 | 33 |
| 28 | 0.4142 | 0.4550 | 2.1977 | 0.9102 | 32 |
| 29 | 0.4144 | 0.4554 | 2.1960 | 0.9101 | 31 |
| 30 | 0.4147 | 0.4557 | 2.1943 | 0.9100 | 30 |
| 31 | 0.4150 | 0.4561 | 2.1926 | 0.9098 | 29 |
| 32 | 0.4152 | 0.4564 | 2.1909 | 0.9097 | 28 |
| 33 | 0.4155 | 0.4568 | 2.1892 | 0.9096 | 27 |
| 34 | 0.4158 | 0.4571 | 2.1876 | 0.9095 | 26 |
| 35 | 0.4160 | 0.4575 | 2.1859 | 0.9094 | 25 |
| 36 | 0.4163 | 0.4578 | 2.1842 | 0.9092 | 24 |
| 37 | 0.4165 | 0.4582 | 2.1825 | 0.9091 | 23 |
| 38 | 0.4168 | 0.4585 | 2.1808 | 0.9090 | 22 |
| 39 | 0.4171 | 0.4589 | 2.1792 | 0.9089 | 21 |
| 40 | 0.4173 | 0.4592 | 2.1775 | 0.9088 | 20 |
| 41 | 0.4176 | 0.4596 | 2.1758 | 0.9086 | 19 |
| 42 | 0.4179 | 0.4599 | 2.1742 | 0.9085 | 18 |
| 43 | 0.4181 | 0.4603 | 2.1725 | 0.9084 | 17 |
| 44 | 0.4184 | 0.4607 | 2.1708 | 0.9083 | 16 |
| 45 | 0.4187 | 0.4610 | 2.1692 | 0.9081 | 15 |
| 46 | 0.4189 | 0.4614 | 2.1675 | 0.9080 | 14 |
| 47 | 0.4192 | 0.4617 | 2.1659 | 0.9079 | 13 |
| 48 | 0.4195 | 0.4621 | 2.1642 | 0.9078 | 12 |
| 49 | 0.4197 | 0.4624 | 2.1625 | 0.9077 | 11 |
| 50 | 0.4200 | 0.4628 | 2.1609 | 0.9075 | 10 |
| 51 | 0.4202 | 0.4631 | 2.1592 | 0.9074 | 9 |
| 52 | 0.4205 | 0.4635 | 2.1576 | 0.9073 | 8 |
| 53 | 0.4208 | 0.4638 | 2.1560 | 0.9072 | 7 |
| 54 | 0.4210 | 0.4642 | 2.1543 | 0.9070 | 6 |
| 55 | 0.4213 | 0.4645 | 2.1527 | 0.9069 | 5 |
| 56 | 0.4216 | 0.4649 | 2.1510 | 0.9068 | 4 |
| 57 | 0.4218 | 0.4652 | 2.1494 | 0.9067 | 3 |
| 58 | 0.4221 | 0.4656 | 2.1478 | 0.9066 | 2 |
| 59 | 0.4224 | 0.4660 | 2.1461 | 0.9064 | 1 |
| 60 | 0.4226 | 0.4663 | 2.1445 | 0.9063 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4226 | 0.4663 | 2.1445 | 0.9063 | 60 |
| 1 | 0.4229 | 0.4667 | 2.1429 | 0.9062 | 59 |
| 2 | 0.4231 | 0.4670 | 2.1413 | 0.9061 | 58 |
| 3 | 0.4234 | 0.4674 | 2.1396 | 0.9059 | 57 |
| 4 | 0.4237 | 0.4677 | 2.1380 | 0.9058 | 56 |
| 5 | 0.4239 | 0.4681 | 2.1364 | 0.9057 | 55 |
| 6 | 0.4242 | 0.4684 | 2.1348 | 0.9056 | 54 |
| 7 | 0.4245 | 0.4688 | 2.1332 | 0.9054 | 53 |
| 8 | 0.4247 | 0.4691 | 2.1315 | 0.9053 | 52 |
| 9 | 0.4250 | 0.4695 | 2.1299 | 0.9052 | 51 |
| 10 | 0.4253 | 0.4699 | 2.1283 | 0.9051 | 50 |
| 11 | 0.4255 | 0.4702 | 2.1267 | 0.9050 | 49 |
| 12 | 0.4258 | 0.4706 | 2.1251 | 0.9048 | 48 |
| 13 | 0.4260 | 0.4709 | 2.1235 | 0.9047 | 47 |
| 14 | 0.4263 | 0.4713 | 2.1219 | 0.9046 | 46 |
| 15 | 0.4266 | 0.4716 | 2.1203 | 0.9045 | 45 |
| 16 | 0.4268 | 0.4720 | 2.1187 | 0.9043 | 44 |
| 17 | 0.4271 | 0.4723 | 2.1171 | 0.9042 | 43 |
| 18 | 0.4274 | 0.4727 | 2.1155 | 0.9041 | 42 |
| 19 | 0.4276 | 0.4731 | 2.1139 | 0.9040 | 41 |
| 20 | 0.4279 | 0.4734 | 2.1123 | 0.9038 | 40 |
| 21 | 0.4281 | 0.4738 | 2.1107 | 0.9037 | 39 |
| 22 | 0.4284 | 0.4741 | 2.1092 | 0.9036 | 38 |
| 23 | 0.4287 | 0.4745 | 2.1076 | 0.9035 | 37 |
| 24 | 0.4289 | 0.4748 | 2.1060 | 0.9033 | 36 |
| 25 | 0.4292 | 0.4752 | 2.1044 | 0.9032 | 35 |
| 26 | 0.4295 | 0.4755 | 2.1028 | 0.9031 | 34 |
| 27 | 0.4297 | 0.4759 | 2.1013 | 0.9030 | 33 |
| 28 | 0.4300 | 0.4763 | 2.0997 | 0.9028 | 32 |
| 29 | 0.4302 | 0.4766 | 2.0981 | 0.9027 | 31 |
| 30 | 0.4305 | 0.4770 | 2.0965 | 0.9026 | 30 |
| 31 | 0.4308 | 0.4773 | 2.0950 | 0.9025 | 29 |
| 32 | 0.4310 | 0.4777 | 2.0934 | 0.9023 | 28 |
| 33 | 0.4313 | 0.4780 | 2.0918 | 0.9022 | 27 |
| 34 | 0.4316 | 0.4784 | 2.0903 | 0.9021 | 26 |
| 35 | 0.4318 | 0.4788 | 2.0887 | 0.9020 | 25 |
| 36 | 0.4321 | 0.4791 | 2.0872 | 0.9018 | 24 |
| 37 | 0.4323 | 0.4795 | 2.0856 | 0.9017 | 23 |
| 38 | 0.4326 | 0.4798 | 2.0840 | 0.9016 | 22 |
| 39 | 0.4329 | 0.4802 | 2.0825 | 0.9015 | 21 |
| 40 | 0.4331 | 0.4806 | 2.0809 | 0.9013 | 20 |
| 41 | 0.4334 | 0.4809 | 2.0794 | 0.9012 | 19 |
| 42 | 0.4337 | 0.4813 | 2.0778 | 0.9011 | 18 |
| 43 | 0.4339 | 0.4816 | 2.0763 | 0.9010 | 17 |
| 44 | 0.4342 | 0.4820 | 2.0748 | 0.9008 | 16 |
| 45 | 0.4344 | 0.4823 | 2.0732 | 0.9007 | 15 |
| 46 | 0.4347 | 0.4827 | 2.0717 | 0.9006 | 14 |
| 47 | 0.4350 | 0.4831 | 2.0701 | 0.9004 | 13 |
| 48 | 0.4352 | 0.4834 | 2.0686 | 0.9003 | 12 |
| 49 | 0.4355 | 0.4838 | 2.0671 | 0.9002 | 11 |
| 50 | 0.4358 | 0.4841 | 2.0655 | 0.9001 | 10 |
| 51 | 0.4360 | 0.4845 | 2.0640 | 0.8999 | 9 |
| 52 | 0.4363 | 0.4849 | 2.0625 | 0.8998 | 8 |
| 53 | 0.4365 | 0.4852 | 2.0609 | 0.8997 | 7 |
| 54 | 0.4368 | 0.4856 | 2.0594 | 0.8996 | 6 |
| 55 | 0.4371 | 0.4859 | 2.0579 | 0.8994 | 5 |
| 56 | 0.4373 | 0.4863 | 2.0564 | 0.8993 | 4 |
| 57 | 0.4376 | 0.4867 | 2.0549 | 0.8992 | 3 |
| 58 | 0.4378 | 0.4870 | 2.0533 | 0.8990 | 2 |
| 59 | 0.4381 | 0.4874 | 2.0518 | 0.8989 | 1 |
| 60 | 0.4384 | 0.4877 | 2.0503 | 0.8988 | 0 |
| | Cos | Cot | Tan | Sin | |

*116° 206° *296°

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NATURAL

27°

*117° 207° *297°

| ' | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4384 | 0.4877 | 2.0503 | 0.8988 | 60 |
| 1 | 0.4386 | 0.4881 | 2.0488 | 0.8987 | 59 |
| 2 | 0.4389 | 0.4885 | 2.0473 | 0.8985 | 58 |
| 3 | 0.4392 | 0.4888 | 2.0458 | 0.8984 | 57 |
| 4 | 0.4394 | 0.4892 | 2.0443 | 0.8983 | 56 |
| 5 | 0.4397 | 0.4895 | 2.0428 | 0.8982 | 55 |
| 6 | 0.4399 | 0.4899 | 2.0413 | 0.8980 | 54 |
| 7 | 0.4402 | 0.4903 | 2.0398 | 0.8979 | 53 |
| 8 | 0.4405 | 0.4906 | 2.0383 | 0.8978 | 52 |
| 9 | 0.4407 | 0.4910 | 2.0368 | 0.8976 | 51 |
| 10 | 0.4410 | 0.4913 | 2.0353 | 0.8975 | 50 |
| 11 | 0.4412 | 0.4917 | 2.0338 | 0.8974 | 49 |
| 12 | 0.4415 | 0.4921 | 2.0323 | 0.8973 | 48 |
| 13 | 0.4418 | 0.4924 | 2.0308 | 0.8971 | 47 |
| 14 | 0.4420 | 0.4928 | 2.0293 | 0.8970 | 46 |
| 15 | 0.4423 | 0.4931 | 2.0278 | 0.8969 | 45 |
| 16 | 0.4425 | 0.4935 | 2.0263 | 0.8967 | 44 |
| 17 | 0.4428 | 0.4939 | 2.0248 | 0.8966 | 43 |
| 18 | 0.4431 | 0.4942 | 2.0233 | 0.8965 | 42 |
| 19 | 0.4433 | 0.4946 | 2.0219 | 0.8964 | 41 |
| 20 | 0.4436 | 0.4950 | 2.0204 | 0.8962 | 40 |
| 21 | 0.4439 | 0.4953 | 2.0189 | 0.8961 | 39 |
| 22 | 0.4441 | 0.4957 | 2.0174 | 0.8960 | 38 |
| 23 | 0.4444 | 0.4960 | 2.0160 | 0.8958 | 37 |
| 24 | 0.4446 | 0.4964 | 2.0145 | 0.8957 | 36 |
| 25 | 0.4449 | 0.4968 | 2.0130 | 0.8956 | 35 |
| 26 | 0.4452 | 0.4971 | 2.0115 | 0.8955 | 34 |
| 27 | 0.4454 | 0.4975 | 2.0101 | 0.8953 | 33 |
| 28 | 0.4457 | 0.4979 | 2.0086 | 0.8952 | 32 |
| 29 | 0.4459 | 0.4982 | 2.0072 | 0.8951 | 31 |
| 30 | 0.4462 | 0.4986 | 2.0057 | 0.8949 | 30 |
| 31 | 0.4465 | 0.4989 | 2.0042 | 0.8948 | 29 |
| 32 | 0.4467 | 0.4993 | 2.0028 | 0.8947 | 28 |
| 33 | 0.4470 | 0.4997 | 2.0013 | 0.8945 | 27 |
| 34 | 0.4472 | 0.5000 | 1.9999 | 0.8944 | 26 |
| 35 | 0.4475 | 0.5004 | 1.9984 | 0.8943 | 25 |
| 36 | 0.4478 | 0.5008 | 1.9970 | 0.8942 | 24 |
| 37 | 0.4480 | 0.5011 | 1.9955 | 0.8940 | 23 |
| 38 | 0.4483 | 0.5015 | 1.9941 | 0.8939 | 22 |
| 39 | 0.4485 | 0.5019 | 1.9926 | 0.8938 | 21 |
| 40 | 0.4488 | 0.5022 | 1.9912 | 0.8936 | 20 |
| 41 | 0.4491 | 0.5026 | 1.9897 | 0.8935 | 19 |
| 42 | 0.4493 | 0.5029 | 1.9883 | 0.8934 | 18 |
| 43 | 0.4496 | 0.5033 | 1.9868 | 0.8932 | 17 |
| 44 | 0.4498 | 0.5037 | 1.9854 | 0.8931 | 16 |
| 45 | 0.4501 | 0.5040 | 1.9840 | 0.8930 | 15 |
| 46 | 0.4504 | 0.5044 | 1.9825 | 0.8928 | 14 |
| 47 | 0.4506 | 0.5048 | 1.9811 | 0.8927 | 13 |
| 48 | 0.4509 | 0.5051 | 1.9797 | 0.8926 | 12 |
| 49 | 0.4511 | 0.5055 | 1.9782 | 0.8925 | 11 |
| 50 | 0.4514 | 0.5059 | 1.9768 | 0.8923 | 10 |
| 51 | 0.4517 | 0.5062 | 1.9754 | 0.8922 | 9 |
| 52 | 0.4519 | 0.5066 | 1.9740 | 0.8921 | 8 |
| 53 | 0.4522 | 0.5070 | 1.9725 | 0.8919 | 7 |
| 54 | 0.4524 | 0.5073 | 1.9711 | 0.8918 | 6 |
| 55 | 0.4527 | 0.5077 | 1.9697 | 0.8917 | 5 |
| 56 | 0.4530 | 0.5081 | 1.9683 | 0.8915 | 4 |
| 57 | 0.4532 | 0.5084 | 1.9669 | 0.8914 | 3 |
| 58 | 0.4535 | 0.5088 | 1.9654 | 0.8913 | 2 |
| 59 | 0.4537 | 0.5092 | 1.9640 | 0.8911 | 1 |
| 60 | 0.4540 | 0.5095 | 1.9626 | 0.8910 | 0 |
| | Cos | Cot | Tan | Sin | |

*153° 243° *333°

63°

NATURAL

62°

*152° 242° *332°

| ' | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4540 | 0.5095 | 1.9626 | 0.8910 | 60 |
| 1 | 0.4542 | 0.5099 | 1.9612 | 0.8909 | 59 |
| 2 | 0.4545 | 0.5103 | 1.9598 | 0.8907 | 58 |
| 3 | 0.4548 | 0.5106 | 1.9584 | 0.8906 | 57 |
| 4 | 0.4550 | 0.5110 | 1.9570 | 0.8905 | 56 |
| 5 | 0.4553 | 0.5114 | 1.9556 | 0.8903 | 55 |
| 6 | 0.4555 | 0.5117 | 1.9542 | 0.8902 | 54 |
| 7 | 0.4558 | 0.5121 | 1.9528 | 0.8901 | 53 |
| 8 | 0.4561 | 0.5125 | 1.9514 | 0.8899 | 52 |
| 9 | 0.4563 | 0.5128 | 1.9500 | 0.8898 | 51 |
| 10 | 0.4566 | 0.5132 | 1.9486 | 0.8897 | 50 |
| 11 | 0.4568 | 0.5136 | 1.9472 | 0.8895 | 49 |
| 12 | 0.4571 | 0.5139 | 1.9458 | 0.8894 | 48 |
| 13 | 0.4574 | 0.5143 | 1.9444 | 0.8893 | 47 |
| 14 | 0.4576 | 0.5147 | 1.9430 | 0.8892 | 46 |
| 15 | 0.4579 | 0.5150 | 1.9416 | 0.8890 | 45 |
| 16 | 0.4581 | 0.5154 | 1.9402 | 0.8889 | 44 |
| 17 | 0.4584 | 0.5158 | 1.9388 | 0.8888 | 43 |
| 18 | 0.4586 | 0.5161 | 1.9375 | 0.8886 | 42 |
| 19 | 0.4589 | 0.5165 | 1.9361 | 0.8885 | 41 |
| 20 | 0.4592 | 0.5169 | 1.9347 | 0.8884 | 40 |
| 21 | 0.4594 | 0.5172 | 1.9333 | 0.8882 | 39 |
| 22 | 0.4597 | 0.5176 | 1.9319 | 0.8881 | 38 |
| 23 | 0.4599 | 0.5180 | 1.9306 | 0.8879 | 37 |
| 24 | 0.4602 | 0.5184 | 1.9292 | 0.8878 | 36 |
| 25 | 0.4605 | 0.5187 | 1.9278 | 0.8877 | 35 |
| 26 | 0.4607 | 0.5191 | 1.9265 | 0.8875 | 34 |
| 27 | 0.4610 | 0.5195 | 1.9251 | 0.8874 | 33 |
| 28 | 0.4612 | 0.5198 | 1.9237 | 0.8873 | 32 |
| 29 | 0.4615 | 0.5202 | 1.9223 | 0.8871 | 31 |
| 30 | 0.4617 | 0.5206 | 1.9210 | 0.8870 | 30 |
| 31 | 0.4620 | 0.5209 | 1.9196 | 0.8869 | 29 |
| 32 | 0.4623 | 0.5213 | 1.9183 | 0.8867 | 28 |
| 33 | 0.4625 | 0.5217 | 1.9169 | 0.8866 | 27 |
| 34 | 0.4628 | 0.5220 | 1.9155 | 0.8865 | 26 |
| 35 | 0.4630 | 0.5224 | 1.9142 | 0.8863 | 25 |
| 36 | 0.4633 | 0.5228 | 1.9128 | 0.8862 | 24 |
| 37 | 0.4636 | 0.5232 | 1.9115 | 0.8861 | 23 |
| 38 | 0.4638 | 0.5235 | 1.9101 | 0.8859 | 22 |
| 39 | 0.4641 | 0.5239 | 1.9088 | 0.8858 | 21 |
| 40 | 0.4643 | 0.5243 | 1.9074 | 0.8857 | 20 |
| 41 | 0.4646 | 0.5246 | 1.9061 | 0.8855 | 19 |
| 42 | 0.4648 | 0.5250 | 1.9047 | 0.8854 | 18 |
| 43 | 0.4651 | 0.5254 | 1.9034 | 0.8853 | 17 |
| 44 | 0.4654 | 0.5258 | 1.9020 | 0.8851 | 16 |
| 45 | 0.4656 | 0.5261 | 1.9007 | 0.8850 | 15 |
| 46 | 0.4659 | 0.5265 | 1.8993 | 0.8849 | 14 |
| 47 | 0.4661 | 0.5269 | 1.8980 | 0.8847 | 13 |
| 48 | 0.4664 | 0.5272 | 1.8967 | 0.8846 | 12 |
| 49 | 0.4666 | 0.5276 | 1.8953 | 0.8844 | 11 |
| 50 | 0.4669 | 0.5280 | 1.8940 | 0.8843 | 10 |
| 51 | 0.4672 | 0.5284 | 1.8927 | 0.8842 | 9 |
| 52 | 0.4674 | 0.5287 | 1.8913 | 0.8840 | 8 |
| 53 | 0.4677 | 0.5291 | 1.8900 | 0.8839 | 7 |
| 54 | 0.4679 | 0.5295 | 1.8887 | 0.8838 | 6 |
| 55 | 0.4682 | 0.5298 | 1.8873 | 0.8836 | 5 |
| 56 | 0.4684 | 0.5302 | 1.8860 | 0.8835 | 4 |
| 57 | 0.4687 | 0.5306 | 1.8847 | 0.8834 | 3 |
| 58 | 0.4690 | 0.5310 | 1.8834 | 0.8832 | 2 |
| 59 | 0.4692 | 0.5313 | 1.8820 | 0.8831 | 1 |
| 60 | 0.4695 | 0.5317 | 1.8807 | 0.8829 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4005 | 0.5317 | 1.8807 | 0.8829 | 60 |
| 1 | 0.4007 | 0.5321 | 1.8794 | 0.8828 | 59 |
| 2 | 0.4700 | 0.5325 | 1.8781 | 0.8827 | 58 |
| 3 | 0.4702 | 0.5328 | 1.8768 | 0.8825 | 57 |
| 4 | 0.4705 | 0.5332 | 1.8755 | 0.8824 | 56 |
| 5 | 0.4708 | 0.5336 | 1.8741 | 0.8823 | 55 |
| 6 | 0.4710 | 0.5340 | 1.8728 | 0.8821 | 54 |
| 7 | 0.4713 | 0.5343 | 1.8715 | 0.8820 | 53 |
| 8 | 0.4715 | 0.5347 | 1.8702 | 0.8819 | 52 |
| 9 | 0.4718 | 0.5351 | 1.8689 | 0.8817 | 51 |
| 10 | 0.4720 | 0.5354 | 1.8676 | 0.8816 | 50 |
| 11 | 0.4723 | 0.5358 | 1.8663 | 0.8814 | 49 |
| 12 | 0.4726 | 0.5362 | 1.8650 | 0.8813 | 48 |
| 13 | 0.4728 | 0.5366 | 1.8637 | 0.8812 | 47 |
| 14 | 0.4731 | 0.5369 | 1.8624 | 0.8810 | 46 |
| 15 | 0.4733 | 0.5373 | 1.8611 | 0.8809 | 45 |
| 16 | 0.4736 | 0.5377 | 1.8598 | 0.8808 | 44 |
| 17 | 0.4738 | 0.5381 | 1.8585 | 0.8806 | 43 |
| 18 | 0.4741 | 0.5384 | 1.8572 | 0.8805 | 42 |
| 19 | 0.4743 | 0.5388 | 1.8559 | 0.8803 | 41 |
| 20 | 0.4746 | 0.5392 | 1.8546 | 0.8802 | 40 |
| 21 | 0.4749 | 0.5396 | 1.8533 | 0.8801 | 39 |
| 22 | 0.4751 | 0.5399 | 1.8520 | 0.8799 | 38 |
| 23 | 0.4754 | 0.5403 | 1.8507 | 0.8798 | 37 |
| 24 | 0.4756 | 0.5407 | 1.8495 | 0.8796 | 36 |
| 25 | 0.4759 | 0.5411 | 1.8482 | 0.8795 | 35 |
| 26 | 0.4761 | 0.5415 | 1.8469 | 0.8794 | 34 |
| 27 | 0.4764 | 0.5418 | 1.8456 | 0.8792 | 33 |
| 28 | 0.4766 | 0.5422 | 1.8443 | 0.8791 | 32 |
| 29 | 0.4769 | 0.5426 | 1.8430 | 0.8790 | 31 |
| 30 | 0.4772 | 0.5430 | 1.8418 | 0.8788 | 30 |
| 31 | 0.4774 | 0.5433 | 1.8405 | 0.8787 | 29 |
| 32 | 0.4777 | 0.5437 | 1.8392 | 0.8785 | 28 |
| 33 | 0.4779 | 0.5441 | 1.8379 | 0.8784 | 27 |
| 34 | 0.4782 | 0.5445 | 1.8367 | 0.8783 | 26 |
| 35 | 0.4784 | 0.5448 | 1.8354 | 0.8781 | 25 |
| 36 | 0.4787 | 0.5452 | 1.8341 | 0.8780 | 24 |
| 37 | 0.4789 | 0.5456 | 1.8329 | 0.8778 | 23 |
| 38 | 0.4792 | 0.5460 | 1.8316 | 0.8777 | 22 |
| 39 | 0.4795 | 0.5464 | 1.8303 | 0.8776 | 21 |
| 40 | 0.4797 | 0.5467 | 1.8291 | 0.8774 | 20 |
| 41 | 0.4800 | 0.5471 | 1.8278 | 0.8773 | 19 |
| 42 | 0.4802 | 0.5475 | 1.8265 | 0.8771 | 18 |
| 43 | 0.4805 | 0.5479 | 1.8253 | 0.8770 | 17 |
| 44 | 0.4807 | 0.5482 | 1.8240 | 0.8769 | 16 |
| 45 | 0.4810 | 0.5486 | 1.8228 | 0.8767 | 15 |
| 46 | 0.4812 | 0.5490 | 1.8215 | 0.8766 | 14 |
| 47 | 0.4815 | 0.5494 | 1.8202 | 0.8764 | 13 |
| 48 | 0.4818 | 0.5498 | 1.8190 | 0.8763 | 12 |
| 49 | 0.4820 | 0.5501 | 1.8177 | 0.8762 | 11 |
| 50 | 0.4823 | 0.5505 | 1.8165 | 0.8760 | 10 |
| 51 | 0.4825 | 0.5509 | 1.8152 | 0.8759 | 9 |
| 52 | 0.4828 | 0.5513 | 1.8140 | 0.8757 | 8 |
| 53 | 0.4830 | 0.5517 | 1.8127 | 0.8756 | 7 |
| 54 | 0.4833 | 0.5520 | 1.8115 | 0.8755 | 6 |
| 55 | 0.4835 | 0.5524 | 1.8103 | 0.8753 | 5 |
| 56 | 0.4838 | 0.5528 | 1.8090 | 0.8752 | 4 |
| 57 | 0.4840 | 0.5532 | 1.8078 | 0.8750 | 3 |
| 58 | 0.4843 | 0.5535 | 1.8065 | 0.8749 | 2 |
| 59 | 0.4846 | 0.5539 | 1.8053 | 0.8748 | 1 |
| 60 | 0.4848 | 0.5543 | 1.8040 | 0.8746 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.4848 | 0.5543 | 1.8040 | 0.8746 | 60 |
| 1 | 0.4851 | 0.5547 | 1.8028 | 0.8745 | 59 |
| 2 | 0.4853 | 0.5551 | 1.8016 | 0.8743 | 58 |
| 3 | 0.4856 | 0.5555 | 1.8003 | 0.8742 | 57 |
| 4 | 0.4858 | 0.5558 | 1.7991 | 0.8741 | 56 |
| 5 | 0.4861 | 0.5562 | 1.7979 | 0.8739 | 55 |
| 6 | 0.4863 | 0.5566 | 1.7966 | 0.8738 | 54 |
| 7 | 0.4866 | 0.5570 | 1.7954 | 0.8736 | 53 |
| 8 | 0.4868 | 0.5574 | 1.7942 | 0.8735 | 52 |
| 9 | 0.4871 | 0.5577 | 1.7930 | 0.8733 | 51 |
| 10 | 0.4874 | 0.5581 | 1.7917 | 0.8732 | 50 |
| 11 | 0.4876 | 0.5585 | 1.7905 | 0.8731 | 49 |
| 12 | 0.4879 | 0.5589 | 1.7893 | 0.8729 | 48 |
| 13 | 0.4881 | 0.5593 | 1.7881 | 0.8728 | 47 |
| 14 | 0.4884 | 0.5596 | 1.7868 | 0.8726 | 46 |
| 15 | 0.4886 | 0.5600 | 1.7856 | 0.8725 | 45 |
| 16 | 0.4889 | 0.5604 | 1.7844 | 0.8724 | 44 |
| 17 | 0.4891 | 0.5608 | 1.7832 | 0.8722 | 43 |
| 18 | 0.4894 | 0.5612 | 1.7820 | 0.8721 | 42 |
| 19 | 0.4896 | 0.5616 | 1.7808 | 0.8719 | 41 |
| 20 | 0.4899 | 0.5619 | 1.7796 | 0.8718 | 40 |
| 21 | 0.4901 | 0.5623 | 1.7783 | 0.8716 | 39 |
| 22 | 0.4904 | 0.5627 | 1.7771 | 0.8715 | 38 |
| 23 | 0.4907 | 0.5631 | 1.7759 | 0.8714 | 37 |
| 24 | 0.4909 | 0.5635 | 1.7747 | 0.8712 | 36 |
| 25 | 0.4912 | 0.5639 | 1.7735 | 0.8711 | 35 |
| 26 | 0.4914 | 0.5642 | 1.7723 | 0.8709 | 34 |
| 27 | 0.4917 | 0.5646 | 1.7711 | 0.8708 | 33 |
| 28 | 0.4919 | 0.5650 | 1.7699 | 0.8706 | 32 |
| 29 | 0.4922 | 0.5654 | 1.7687 | 0.8705 | 31 |
| 30 | 0.4924 | 0.5658 | 1.7675 | 0.8704 | 30 |
| 31 | 0.4927 | 0.5662 | 1.7663 | 0.8702 | 29 |
| 32 | 0.4929 | 0.5665 | 1.7651 | 0.8701 | 28 |
| 33 | 0.4932 | 0.5669 | 1.7639 | 0.8699 | 27 |
| 34 | 0.4934 | 0.5673 | 1.7627 | 0.8698 | 26 |
| 35 | 0.4937 | 0.5677 | 1.7615 | 0.8696 | 25 |
| 36 | 0.4939 | 0.5681 | 1.7603 | 0.8695 | 24 |
| 37 | 0.4942 | 0.5685 | 1.7591 | 0.8694 | 23 |
| 38 | 0.4944 | 0.5688 | 1.7579 | 0.8692 | 22 |
| 39 | 0.4947 | 0.5692 | 1.7567 | 0.8691 | 21 |
| 40 | 0.4950 | 0.5696 | 1.7556 | 0.8690 | 20 |
| 41 | 0.4952 | 0.5700 | 1.7544 | 0.8688 | 19 |
| 42 | 0.4955 | 0.5704 | 1.7532 | 0.8686 | 18 |
| 43 | 0.4957 | 0.5708 | 1.7520 | 0.8685 | 17 |
| 44 | 0.4960 | 0.5712 | 1.7508 | 0.8683 | 16 |
| 45 | 0.4962 | 0.5715 | 1.7496 | 0.8682 | 15 |
| 46 | 0.4965 | 0.5719 | 1.7485 | 0.8681 | 14 |
| 47 | 0.4967 | 0.5723 | 1.7473 | 0.8679 | 13 |
| 48 | 0.4970 | 0.5727 | 1.7461 | 0.8678 | 12 |
| 49 | 0.4972 | 0.5731 | 1.7449 | 0.8676 | 11 |
| 50 | 0.4975 | 0.5735 | 1.7437 | 0.8675 | 10 |
| 51 | 0.4977 | 0.5739 | 1.7426 | 0.8673 | 9 |
| 52 | 0.4980 | 0.5743 | 1.7414 | 0.8672 | 8 |
| 53 | 0.4982 | 0.5746 | 1.7402 | 0.8670 | 7 |
| 54 | 0.4985 | 0.5750 | 1.7391 | 0.8669 | 6 |
| 55 | 0.4987 | 0.5754 | 1.7379 | 0.8668 | 5 |
| 56 | 0.4990 | 0.5758 | 1.7367 | 0.8666 | 4 |
| 57 | 0.4992 | 0.5762 | 1.7355 | 0.8665 | 3 |
| 58 | 0.4995 | 0.5766 | 1.7344 | 0.8663 | 2 |
| 59 | 0.4997 | 0.5770 | 1.7332 | 0.8662 | 1 |
| 60 | 0.5000 | 0.5774 | 1.7321 | 0.8660 | 0 |
| | Cos | Cot | Tan | Sin | |

*120° 210° *300°

30°

NATURAL

31°

*121° 211° *301°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5000 | 0.5774 | 1.7321 | 0.8660 | 60 |
| 1 | 0.5003 | 0.5777 | 1.7309 | 0.8659 | 59 |
| 2 | 0.5005 | 0.5781 | 1.7297 | 0.8657 | 58 |
| 3 | 0.5008 | 0.5785 | 1.7286 | 0.8656 | 57 |
| 4 | 0.5010 | 0.5789 | 1.7274 | 0.8654 | 56 |
| 5 | 0.5013 | 0.5793 | 1.7262 | 0.8653 | 55 |
| 6 | 0.5015 | 0.5797 | 1.7251 | 0.8652 | 54 |
| 7 | 0.5018 | 0.5801 | 1.7239 | 0.8650 | 53 |
| 8 | 0.5020 | 0.5805 | 1.7228 | 0.8649 | 52 |
| 9 | 0.5023 | 0.5808 | 1.7216 | 0.8647 | 51 |
| 10 | 0.5025 | 0.5812 | 1.7205 | 0.8646 | 50 |
| 11 | 0.5028 | 0.5816 | 1.7193 | 0.8644 | 49 |
| 12 | 0.5030 | 0.5820 | 1.7182 | 0.8643 | 48 |
| 13 | 0.5033 | 0.5824 | 1.7170 | 0.8641 | 47 |
| 14 | 0.5035 | 0.5828 | 1.7159 | 0.8640 | 46 |
| 15 | 0.5038 | 0.5832 | 1.7147 | 0.8638 | 45 |
| 16 | 0.5040 | 0.5836 | 1.7136 | 0.8637 | 44 |
| 17 | 0.5043 | 0.5840 | 1.7124 | 0.8635 | 43 |
| 18 | 0.5045 | 0.5844 | 1.7113 | 0.8634 | 42 |
| 19 | 0.5048 | 0.5847 | 1.7102 | 0.8632 | 41 |
| 20 | 0.5050 | 0.5851 | 1.7090 | 0.8631 | 40 |
| 21 | 0.5053 | 0.5855 | 1.7079 | 0.8630 | 39 |
| 22 | 0.5055 | 0.5859 | 1.7067 | 0.8628 | 38 |
| 23 | 0.5058 | 0.5863 | 1.7056 | 0.8627 | 37 |
| 24 | 0.5060 | 0.5867 | 1.7045 | 0.8625 | 36 |
| 25 | 0.5063 | 0.5871 | 1.7033 | 0.8624 | 35 |
| 26 | 0.5065 | 0.5875 | 1.7022 | 0.8622 | 34 |
| 27 | 0.5068 | 0.5879 | 1.7011 | 0.8621 | 33 |
| 28 | 0.5070 | 0.5883 | 1.6999 | 0.8619 | 32 |
| 29 | 0.5073 | 0.5887 | 1.6988 | 0.8618 | 31 |
| 30 | 0.5075 | 0.5890 | 1.6977 | 0.8616 | 30 |
| 31 | 0.5078 | 0.5894 | 1.6965 | 0.8615 | 29 |
| 32 | 0.5080 | 0.5898 | 1.6954 | 0.8613 | 28 |
| 33 | 0.5083 | 0.5902 | 1.6943 | 0.8612 | 27 |
| 34 | 0.5085 | 0.5906 | 1.6932 | 0.8610 | 26 |
| 35 | 0.5088 | 0.5910 | 1.6920 | 0.8609 | 25 |
| 36 | 0.5090 | 0.5914 | 1.6909 | 0.8607 | 24 |
| 37 | 0.5093 | 0.5918 | 1.6898 | 0.8606 | 23 |
| 38 | 0.5095 | 0.5922 | 1.6887 | 0.8604 | 22 |
| 39 | 0.5098 | 0.5926 | 1.6875 | 0.8603 | 21 |
| 40 | 0.5100 | 0.5930 | 1.6864 | 0.8601 | 20 |
| 41 | 0.5103 | 0.5934 | 1.6853 | 0.8600 | 19 |
| 42 | 0.5105 | 0.5938 | 1.6842 | 0.8599 | 18 |
| 43 | 0.5108 | 0.5942 | 1.6831 | 0.8597 | 17 |
| 44 | 0.5110 | 0.5945 | 1.6820 | 0.8596 | 16 |
| 45 | 0.5113 | 0.5949 | 1.6808 | 0.8594 | 15 |
| 46 | 0.5115 | 0.5953 | 1.6797 | 0.8593 | 14 |
| 47 | 0.5118 | 0.5957 | 1.6786 | 0.8591 | 13 |
| 48 | 0.5120 | 0.5961 | 1.6775 | 0.8590 | 12 |
| 49 | 0.5123 | 0.5965 | 1.6764 | 0.8588 | 11 |
| 50 | 0.5125 | 0.5969 | 1.6753 | 0.8587 | 10 |
| 51 | 0.5128 | 0.5973 | 1.6742 | 0.8585 | 9 |
| 52 | 0.5130 | 0.5977 | 1.6731 | 0.8584 | 8 |
| 53 | 0.5133 | 0.5981 | 1.6720 | 0.8582 | 7 |
| 54 | 0.5135 | 0.5985 | 1.6709 | 0.8581 | 6 |
| 55 | 0.5138 | 0.5989 | 1.6698 | 0.8579 | 5 |
| 56 | 0.5140 | 0.5993 | 1.6687 | 0.8578 | 4 |
| 57 | 0.5143 | 0.5997 | 1.6676 | 0.8576 | 3 |
| 58 | 0.5145 | 0.6001 | 1.6665 | 0.8575 | 2 |
| 59 | 0.5148 | 0.6005 | 1.6654 | 0.8573 | 1 |
| 60 | 0.5150 | 0.6009 | 1.6643 | 0.8572 | 0 |
| | Cos | Cot | Tan | Sin | |

*149° 239° *329°

59°

NATURAL

58°

*148° 238° *328°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5150 | 0.6009 | 1.6643 | 0.8572 | 60 |
| 1 | 0.5153 | 0.6013 | 1.6632 | 0.8579 | 59 |
| 2 | 0.5155 | 0.6017 | 1.6621 | 0.8569 | 58 |
| 3 | 0.5158 | 0.6020 | 1.6610 | 0.8567 | 57 |
| 4 | 0.5160 | 0.6024 | 1.6599 | 0.8566 | 56 |
| 5 | 0.5163 | 0.6028 | 1.6588 | 0.8564 | 55 |
| 6 | 0.5165 | 0.6032 | 1.6577 | 0.8563 | 54 |
| 7 | 0.5168 | 0.6036 | 1.6566 | 0.8561 | 53 |
| 8 | 0.5170 | 0.6040 | 1.6555 | 0.8560 | 52 |
| 9 | 0.5173 | 0.6044 | 1.6545 | 0.8558 | 51 |
| 10 | 0.5175 | 0.6048 | 1.6534 | 0.8557 | 50 |
| 11 | 0.5178 | 0.6052 | 1.6523 | 0.8555 | 49 |
| 12 | 0.5180 | 0.6056 | 1.6512 | 0.8554 | 48 |
| 13 | 0.5183 | 0.6060 | 1.6501 | 0.8552 | 47 |
| 14 | 0.5185 | 0.6064 | 1.6490 | 0.8551 | 46 |
| 15 | 0.5188 | 0.6068 | 1.6479 | 0.8549 | 45 |
| 16 | 0.5190 | 0.6072 | 1.6469 | 0.8548 | 44 |
| 17 | 0.5193 | 0.6076 | 1.6458 | 0.8546 | 43 |
| 18 | 0.5195 | 0.6080 | 1.6447 | 0.8545 | 42 |
| 19 | 0.5198 | 0.6084 | 1.6436 | 0.8543 | 41 |
| 20 | 0.5200 | 0.6088 | 1.6426 | 0.8542 | 40 |
| 21 | 0.5203 | 0.6092 | 1.6415 | 0.8540 | 39 |
| 22 | 0.5205 | 0.6096 | 1.6404 | 0.8539 | 38 |
| 23 | 0.5208 | 0.6100 | 1.6393 | 0.8537 | 37 |
| 24 | 0.5210 | 0.6104 | 1.6383 | 0.8536 | 36 |
| 25 | 0.5213 | 0.6108 | 1.6372 | 0.8534 | 35 |
| 26 | 0.5215 | 0.6112 | 1.6361 | 0.8532 | 34 |
| 27 | 0.5218 | 0.6116 | 1.6351 | 0.8531 | 33 |
| 28 | 0.5220 | 0.6120 | 1.6340 | 0.8529 | 32 |
| 29 | 0.5223 | 0.6124 | 1.6329 | 0.8528 | 31 |
| 30 | 0.5225 | 0.6128 | 1.6319 | 0.8526 | 30 |
| 31 | 0.5227 | 0.6132 | 1.6308 | 0.8525 | 29 |
| 32 | 0.5230 | 0.6136 | 1.6297 | 0.8523 | 28 |
| 33 | 0.5232 | 0.6140 | 1.6287 | 0.8522 | 27 |
| 34 | 0.5235 | 0.6144 | 1.6276 | 0.8520 | 26 |
| 35 | 0.5237 | 0.6148 | 1.6265 | 0.8519 | 25 |
| 36 | 0.5240 | 0.6152 | 1.6255 | 0.8517 | 24 |
| 37 | 0.5242 | 0.6156 | 1.6244 | 0.8516 | 23 |
| 38 | 0.5245 | 0.6160 | 1.6234 | 0.8514 | 22 |
| 39 | 0.5247 | 0.6164 | 1.6223 | 0.8513 | 21 |
| 40 | 0.5250 | 0.6168 | 1.6212 | 0.8511 | 20 |
| 41 | 0.5252 | 0.6172 | 1.6202 | 0.8510 | 19 |
| 42 | 0.5255 | 0.6176 | 1.6191 | 0.8508 | 18 |
| 43 | 0.5257 | 0.6180 | 1.6181 | 0.8507 | 17 |
| 44 | 0.5260 | 0.6184 | 1.6170 | 0.8505 | 16 |
| 45 | 0.5262 | 0.6188 | 1.6160 | 0.8504 | 15 |
| 46 | 0.5265 | 0.6192 | 1.6149 | 0.8502 | 14 |
| 47 | 0.5267 | 0.6196 | 1.6139 | 0.8500 | 13 |
| 48 | 0.5270 | 0.6200 | 1.6128 | 0.8499 | 12 |
| 49 | 0.5272 | 0.6204 | 1.6118 | 0.8497 | 11 |
| 50 | 0.5275 | 0.6208 | 1.6107 | 0.8496 | 10 |
| 51 | 0.5277 | 0.6212 | 1.6097 | 0.8494 | 9 |
| 52 | 0.5279 | 0.6216 | 1.6087 | 0.8493 | 8 |
| 53 | 0.5282 | 0.6220 | 1.6076 | 0.8491 | 7 |
| 54 | 0.5284 | 0.6224 | 1.6066 | 0.8490 | 6 |
| 55 | 0.5287 | 0.6228 | 1.6055 | 0.8488 | 5 |
| 56 | 0.5289 | 0.6233 | 1.6045 | 0.8487 | 4 |
| 57 | 0.5292 | 0.6237 | 1.6034 | 0.8485 | 3 |
| 58 | 0.5294 | 0.6241 | 1.6024 | 0.8484 | 2 |
| 59 | 0.5297 | 0.6245 | 1.6014 | 0.8482 | 1 |
| 60 | 0.5299 | 0.6249 | 1.6003 | 0.8480 | 0 |
| | Cos | Cot | Tan | Sin | |

*149° 239° *329°

59°

NATURAL

58°

*148° 238° *328°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5299 | 0.6249 | 1.6003 | 0.8480 | 60 |
| 1 | 0.5302 | 0.6253 | 1.5993 | 0.8479 | 59 |
| 2 | 0.5304 | 0.6257 | 1.5983 | 0.8477 | 58 |
| 3 | 0.5307 | 0.6261 | 1.5972 | 0.8476 | 57 |
| 4 | 0.5309 | 0.6265 | 1.5962 | 0.8474 | 56 |
| 5 | 0.5312 | 0.6269 | 1.5952 | 0.8473 | 55 |
| 6 | 0.5314 | 0.6273 | 1.5941 | 0.8471 | 54 |
| 7 | 0.5316 | 0.6277 | 1.5931 | 0.8470 | 53 |
| 8 | 0.5319 | 0.6281 | 1.5921 | 0.8468 | 52 |
| 9 | 0.5321 | 0.6285 | 1.5911 | 0.8467 | 51 |
| 10 | 0.5324 | 0.6289 | 1.5900 | 0.8465 | 50 |
| 11 | 0.5326 | 0.6293 | 1.5890 | 0.8463 | 49 |
| 12 | 0.5329 | 0.6297 | 1.5880 | 0.8462 | 48 |
| 13 | 0.5331 | 0.6301 | 1.5869 | 0.8460 | 47 |
| 14 | 0.5334 | 0.6305 | 1.5859 | 0.8459 | 46 |
| 15 | 0.5336 | 0.6310 | 1.5849 | 0.8457 | 45 |
| 16 | 0.5339 | 0.6314 | 1.5839 | 0.8456 | 44 |
| 17 | 0.5341 | 0.6318 | 1.5829 | 0.8454 | 43 |
| 18 | 0.5344 | 0.6322 | 1.5818 | 0.8453 | 42 |
| 19 | 0.5346 | 0.6326 | 1.5808 | 0.8451 | 41 |
| 20 | 0.5348 | 0.6330 | 1.5798 | 0.8450 | 40 |
| 21 | 0.5351 | 0.6334 | 1.5788 | 0.8448 | 39 |
| 22 | 0.5353 | 0.6338 | 1.5778 | 0.8446 | 38 |
| 23 | 0.5356 | 0.6342 | 1.5768 | 0.8445 | 37 |
| 24 | 0.5358 | 0.6346 | 1.5757 | 0.8443 | 36 |
| 25 | 0.5361 | 0.6350 | 1.5747 | 0.8442 | 35 |
| 26 | 0.5363 | 0.6354 | 1.5737 | 0.8440 | 34 |
| 27 | 0.5366 | 0.6358 | 1.5727 | 0.8439 | 33 |
| 28 | 0.5368 | 0.6363 | 1.5717 | 0.8437 | 32 |
| 29 | 0.5371 | 0.6367 | 1.5707 | 0.8435 | 31 |
| 30 | 0.5373 | 0.6371 | 1.5697 | 0.8434 | 30 |
| 31 | 0.5375 | 0.6375 | 1.5687 | 0.8432 | 29 |
| 32 | 0.5378 | 0.6379 | 1.5677 | 0.8431 | 28 |
| 33 | 0.5380 | 0.6383 | 1.5667 | 0.8429 | 27 |
| 34 | 0.5383 | 0.6387 | 1.5657 | 0.8428 | 26 |
| 35 | 0.5385 | 0.6391 | 1.5647 | 0.8426 | 25 |
| 36 | 0.5388 | 0.6395 | 1.5637 | 0.8425 | 24 |
| 37 | 0.5390 | 0.6399 | 1.5627 | 0.8423 | 23 |
| 38 | 0.5393 | 0.6403 | 1.5617 | 0.8421 | 22 |
| 39 | 0.5395 | 0.6408 | 1.5607 | 0.8420 | 21 |
| 40 | 0.5398 | 0.6412 | 1.5597 | 0.8418 | 20 |
| 41 | 0.5400 | 0.6416 | 1.5587 | 0.8417 | 19 |
| 42 | 0.5402 | 0.6420 | 1.5577 | 0.8415 | 18 |
| 43 | 0.5405 | 0.6424 | 1.5567 | 0.8414 | 17 |
| 44 | 0.5407 | 0.6428 | 1.5557 | 0.8412 | 16 |
| 45 | 0.5410 | 0.6432 | 1.5547 | 0.8410 | 15 |
| 46 | 0.5412 | 0.6436 | 1.5537 | 0.8409 | 14 |
| 47 | 0.5415 | 0.6440 | 1.5527 | 0.8407 | 13 |
| 48 | 0.5417 | 0.6445 | 1.5517 | 0.8406 | 12 |
| 49 | 0.5420 | 0.6449 | 1.5507 | 0.8404 | 11 |
| 50 | 0.5422 | 0.6453 | 1.5497 | 0.8403 | 10 |
| 51 | 0.5424 | 0.6457 | 1.5487 | 0.8401 | 9 |
| 52 | 0.5427 | 0.6461 | 1.5477 | 0.8399 | 8 |
| 53 | 0.5429 | 0.6465 | 1.5468 | 0.8398 | 7 |
| 54 | 0.5432 | 0.6469 | 1.5458 | 0.8396 | 6 |
| 55 | 0.5434 | 0.6473 | 1.5448 | 0.8395 | 5 |
| 56 | 0.5437 | 0.6478 | 1.5438 | 0.8393 | 4 |
| 57 | 0.5439 | 0.6482 | 1.5428 | 0.8391 | 3 |
| 58 | 0.5442 | 0.6486 | 1.5418 | 0.8390 | 2 |
| 59 | 0.5444 | 0.6490 | 1.5408 | 0.8388 | 1 |
| 60 | 0.5446 | 0.6494 | 1.5399 | 0.8387 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5446 | 0.6494 | 1.5399 | 0.8387 | 60 |
| 1 | 0.5449 | 0.6498 | 1.5389 | 0.8385 | 59 |
| 2 | 0.5451 | 0.6502 | 1.5379 | 0.8384 | 58 |
| 3 | 0.5454 | 0.6506 | 1.5369 | 0.8382 | 57 |
| 4 | 0.5456 | 0.6511 | 1.5359 | 0.8380 | 56 |
| 5 | 0.5459 | 0.6515 | 1.5350 | 0.8379 | 55 |
| 6 | 0.5461 | 0.6519 | 1.5340 | 0.8377 | 54 |
| 7 | 0.5463 | 0.6523 | 1.5330 | 0.8376 | 53 |
| 8 | 0.5466 | 0.6527 | 1.5320 | 0.8374 | 52 |
| 9 | 0.5468 | 0.6531 | 1.5311 | 0.8372 | 51 |
| 10 | 0.5471 | 0.6536 | 1.5301 | 0.8371 | 50 |
| 11 | 0.5473 | 0.6540 | 1.5291 | 0.8369 | 49 |
| 12 | 0.5476 | 0.6544 | 1.5282 | 0.8368 | 48 |
| 13 | 0.5478 | 0.6548 | 1.5272 | 0.8366 | 47 |
| 14 | 0.5480 | 0.6552 | 1.5262 | 0.8364 | 46 |
| 15 | 0.5483 | 0.6556 | 1.5253 | 0.8363 | 45 |
| 16 | 0.5485 | 0.6560 | 1.5243 | 0.8361 | 44 |
| 17 | 0.5488 | 0.6565 | 1.5233 | 0.8360 | 43 |
| 18 | 0.5490 | 0.6569 | 1.5224 | 0.8358 | 42 |
| 19 | 0.5493 | 0.6573 | 1.5214 | 0.8356 | 41 |
| 20 | 0.5495 | 0.6577 | 1.5204 | 0.8355 | 40 |
| 21 | 0.5498 | 0.6581 | 1.5195 | 0.8353 | 39 |
| 22 | 0.5500 | 0.6585 | 1.5185 | 0.8352 | 38 |
| 23 | 0.5502 | 0.6590 | 1.5175 | 0.8350 | 37 |
| 24 | 0.5505 | 0.6594 | 1.5166 | 0.8348 | 36 |
| 25 | 0.5507 | 0.6598 | 1.5156 | 0.8347 | 35 |
| 26 | 0.5510 | 0.6602 | 1.5147 | 0.8345 | 34 |
| 27 | 0.5512 | 0.6606 | 1.5137 | 0.8344 | 33 |
| 28 | 0.5515 | 0.6610 | 1.5127 | 0.8342 | 32 |
| 29 | 0.5517 | 0.6615 | 1.5118 | 0.8340 | 31 |
| 30 | 0.5519 | 0.6619 | 1.5108 | 0.8339 | 30 |
| 31 | 0.5522 | 0.6623 | 1.5099 | 0.8337 | 29 |
| 32 | 0.5524 | 0.6627 | 1.5089 | 0.8336 | 28 |
| 33 | 0.5527 | 0.6631 | 1.5080 | 0.8334 | 27 |
| 34 | 0.5529 | 0.6636 | 1.5070 | 0.8332 | 26 |
| 35 | 0.5531 | 0.6640 | 1.5061 | 0.8331 | 25 |
| 36 | 0.5534 | 0.6644 | 1.5051 | 0.8329 | 24 |
| 37 | 0.5536 | 0.6648 | 1.5042 | 0.8328 | 23 |
| 38 | 0.5539 | 0.6652 | 1.5032 | 0.8326 | 22 |
| 39 | 0.5541 | 0.6657 | 1.5023 | 0.8324 | 21 |
| 40 | 0.5544 | 0.6661 | 1.5013 | 0.8323 | 20 |
| 41 | 0.5546 | 0.6665 | 1.5004 | 0.8321 | 19 |
| 42 | 0.5548 | 0.6669 | 1.4994 | 0.8320 | 18 |
| 43 | 0.5551 | 0.6673 | 1.4985 | 0.8318 | 17 |
| 44 | 0.5553 | 0.6678 | 1.4975 | 0.8316 | 16 |
| 45 | 0.5556 | 0.6682 | 1.4966 | 0.8315 | 15 |
| 46 | 0.5558 | 0.6686 | 1.4957 | 0.8313 | 14 |
| 47 | 0.5561 | 0.6690 | 1.4947 | 0.8311 | 13 |
| 48 | 0.5563 | 0.6694 | 1.4938 | 0.8310 | 12 |
| 49 | 0.5565 | 0.6699 | 1.4928 | 0.8308 | 11 |
| 50 | 0.5568 | 0.6703 | 1.4919 | 0.8307 | 10 |
| 51 | 0.5570 | 0.6707 | 1.4910 | 0.8305 | 9 |
| 52 | 0.5573 | 0.6711 | 1.4900 | 0.8303 | 8 |
| 53 | 0.5575 | 0.6715 | 1.4891 | 0.8302 | 7 |
| 54 | 0.5577 | 0.6720 | 1.4882 | 0.8300 | 6 |
| 55 | 0.5580 | 0.6724 | 1.4872 | 0.8298 | 5 |
| 56 | 0.5582 | 0.6728 | 1.4863 | 0.8297 | 4 |
| 57 | 0.5585 | 0.6732 | 1.4854 | 0.8295 | 3 |
| 58 | 0.5587 | 0.6737 | 1.4844 | 0.8294 | 2 |
| 59 | 0.5590 | 0.6741 | 1.4835 | 0.8292 | 1 |
| 60 | 0.5592 | 0.6745 | 1.4826 | 0.8290 | 0 |
| | Cos | Cot | Tan | Sin | |

*124° 214° *304°

31°

NATURAL

35° *125° 215° *305°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5592 | 0.6745 | 1.4826 | 0.8290 | 60 |
| 1 | 0.5594 | 0.6749 | 1.4816 | 0.8289 | 59 |
| 2 | 0.5597 | 0.6754 | 1.4807 | 0.8287 | 58 |
| 3 | 0.5599 | 0.6758 | 1.4798 | 0.8285 | 57 |
| 4 | 0.5602 | 0.6762 | 1.4788 | 0.8284 | 56 |
| 5 | 0.5604 | 0.6766 | 1.4779 | 0.8282 | 55 |
| 6 | 0.5606 | 0.6771 | 1.4770 | 0.8281 | 54 |
| 7 | 0.5609 | 0.6775 | 1.4761 | 0.8279 | 53 |
| 8 | 0.5611 | 0.6779 | 1.4751 | 0.8277 | 52 |
| 9 | 0.5614 | 0.6783 | 1.4742 | 0.8276 | 51 |
| 10 | 0.5616 | 0.6787 | 1.4733 | 0.8274 | 50 |
| 11 | 0.5618 | 0.6792 | 1.4724 | 0.8272 | 49 |
| 12 | 0.5621 | 0.6796 | 1.4715 | 0.8271 | 48 |
| 13 | 0.5623 | 0.6800 | 1.4705 | 0.8269 | 47 |
| 14 | 0.5626 | 0.6805 | 1.4696 | 0.8268 | 46 |
| 15 | 0.5628 | 0.6809 | 1.4687 | 0.8266 | 45 |
| 16 | 0.5630 | 0.6813 | 1.4678 | 0.8264 | 44 |
| 17 | 0.5633 | 0.6817 | 1.4669 | 0.8263 | 43 |
| 18 | 0.5635 | 0.6822 | 1.4659 | 0.8261 | 42 |
| 19 | 0.5638 | 0.6826 | 1.4650 | 0.8259 | 41 |
| 20 | 0.5640 | 0.6830 | 1.4641 | 0.8258 | 40 |
| 21 | 0.5642 | 0.6834 | 1.4632 | 0.8256 | 39 |
| 22 | 0.5645 | 0.6839 | 1.4623 | 0.8254 | 38 |
| 23 | 0.5647 | 0.6843 | 1.4614 | 0.8253 | 37 |
| 24 | 0.5650 | 0.6847 | 1.4605 | 0.8251 | 36 |
| 25 | 0.5652 | 0.6851 | 1.4596 | 0.8249 | 35 |
| 26 | 0.5654 | 0.6856 | 1.4586 | 0.8248 | 34 |
| 27 | 0.5657 | 0.6860 | 1.4577 | 0.8246 | 33 |
| 28 | 0.5659 | 0.6864 | 1.4568 | 0.8245 | 32 |
| 29 | 0.5662 | 0.6869 | 1.4559 | 0.8243 | 31 |
| 30 | 0.5664 | 0.6873 | 1.4550 | 0.8241 | 30 |
| 31 | 0.5666 | 0.6877 | 1.4541 | 0.8240 | 29 |
| 32 | 0.5669 | 0.6881 | 1.4532 | 0.8238 | 28 |
| 33 | 0.5671 | 0.6886 | 1.4523 | 0.8236 | 27 |
| 34 | 0.5674 | 0.6890 | 1.4514 | 0.8235 | 26 |
| 35 | 0.5676 | 0.6894 | 1.4505 | 0.8233 | 25 |
| 36 | 0.5678 | 0.6899 | 1.4496 | 0.8231 | 24 |
| 37 | 0.5681 | 0.6903 | 1.4487 | 0.8230 | 23 |
| 38 | 0.5683 | 0.6907 | 1.4478 | 0.8228 | 22 |
| 39 | 0.5686 | 0.6911 | 1.4469 | 0.8226 | 21 |
| 40 | 0.5688 | 0.6916 | 1.4460 | 0.8225 | 20 |
| 41 | 0.5690 | 0.6920 | 1.4451 | 0.8223 | 19 |
| 42 | 0.5693 | 0.6924 | 1.4442 | 0.8221 | 18 |
| 43 | 0.5695 | 0.6929 | 1.4433 | 0.8220 | 17 |
| 44 | 0.5698 | 0.6933 | 1.4424 | 0.8218 | 16 |
| 45 | 0.5700 | 0.6937 | 1.4415 | 0.8216 | 15 |
| 46 | 0.5702 | 0.6942 | 1.4406 | 0.8215 | 14 |
| 47 | 0.5705 | 0.6946 | 1.4397 | 0.8213 | 13 |
| 48 | 0.5707 | 0.6950 | 1.4388 | 0.8211 | 12 |
| 49 | 0.5710 | 0.6954 | 1.4379 | 0.8210 | 11 |
| 50 | 0.5712 | 0.6959 | 1.4370 | 0.8208 | 10 |
| 51 | 0.5714 | 0.6963 | 1.4361 | 0.8207 | 9 |
| 52 | 0.5717 | 0.6967 | 1.4352 | 0.8205 | 8 |
| 53 | 0.5719 | 0.6972 | 1.4344 | 0.8203 | 7 |
| 54 | 0.5721 | 0.6976 | 1.4335 | 0.8202 | 6 |
| 55 | 0.5724 | 0.6980 | 1.4326 | 0.8200 | 5 |
| 56 | 0.5726 | 0.6985 | 1.4317 | 0.8198 | 4 |
| 57 | 0.5729 | 0.6989 | 1.4308 | 0.8197 | 3 |
| 58 | 0.5731 | 0.6993 | 1.4299 | 0.8195 | 2 |
| 59 | 0.5733 | 0.6998 | 1.4290 | 0.8193 | 1 |
| 60 | 0.5736 | 0.7002 | 1.4281 | 0.8192 | 0 |
| | Cos | Cot | Tan | Sin | |

*145° 235° *325°

55°

NATURAL

54°

*144° 234° *324°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5736 | 0.7002 | 1.4281 | 0.8192 | 60 |
| 1 | 0.5738 | 0.7006 | 1.4273 | 0.8190 | 59 |
| 2 | 0.5741 | 0.7011 | 1.4264 | 0.8188 | 58 |
| 3 | 0.5743 | 0.7015 | 1.4255 | 0.8187 | 57 |
| 4 | 0.5745 | 0.7019 | 1.4246 | 0.8185 | 56 |
| 5 | 0.5748 | 0.7024 | 1.4237 | 0.8183 | 55 |
| 6 | 0.5750 | 0.7028 | 1.4229 | 0.8181 | 54 |
| 7 | 0.5752 | 0.7032 | 1.4220 | 0.8180 | 53 |
| 8 | 0.5755 | 0.7037 | 1.4211 | 0.8178 | 52 |
| 9 | 0.5757 | 0.7041 | 1.4202 | 0.8176 | 51 |
| 10 | 0.5760 | 0.7046 | 1.4193 | 0.8175 | 50 |
| 11 | 0.5762 | 0.7050 | 1.4185 | 0.8173 | 49 |
| 12 | 0.5764 | 0.7054 | 1.4176 | 0.8171 | 48 |
| 13 | 0.5767 | 0.7059 | 1.4167 | 0.8170 | 47 |
| 14 | 0.5769 | 0.7063 | 1.4158 | 0.8168 | 46 |
| 15 | 0.5771 | 0.7067 | 1.4150 | 0.8166 | 45 |
| 16 | 0.5774 | 0.7072 | 1.4141 | 0.8165 | 44 |
| 17 | 0.5776 | 0.7076 | 1.4132 | 0.8163 | 43 |
| 18 | 0.5779 | 0.7080 | 1.4124 | 0.8161 | 42 |
| 19 | 0.5781 | 0.7085 | 1.4115 | 0.8160 | 41 |
| 20 | 0.5783 | 0.7089 | 1.4106 | 0.8158 | 40 |
| 21 | 0.5786 | 0.7094 | 1.4097 | 0.8156 | 39 |
| 22 | 0.5788 | 0.7098 | 1.4089 | 0.8155 | 38 |
| 23 | 0.5790 | 0.7102 | 1.4080 | 0.8153 | 37 |
| 24 | 0.5793 | 0.7107 | 1.4071 | 0.8151 | 36 |
| 25 | 0.5795 | 0.7111 | 1.4063 | 0.8150 | 35 |
| 26 | 0.5798 | 0.7115 | 1.4054 | 0.8148 | 34 |
| 27 | 0.5800 | 0.7120 | 1.4045 | 0.8146 | 33 |
| 28 | 0.5802 | 0.7124 | 1.4037 | 0.8145 | 32 |
| 29 | 0.5805 | 0.7129 | 1.4028 | 0.8143 | 31 |
| 30 | 0.5807 | 0.7133 | 1.4019 | 0.8141 | 30 |
| 31 | 0.5809 | 0.7137 | 1.4011 | 0.8139 | 29 |
| 32 | 0.5812 | 0.7142 | 1.4002 | 0.8138 | 28 |
| 33 | 0.5814 | 0.7146 | 1.3994 | 0.8136 | 27 |
| 34 | 0.5816 | 0.7151 | 1.3985 | 0.8134 | 26 |
| 35 | 0.5819 | 0.7155 | 1.3976 | 0.8133 | 25 |
| 36 | 0.5821 | 0.7159 | 1.3968 | 0.8131 | 24 |
| 37 | 0.5824 | 0.7164 | 1.3959 | 0.8129 | 23 |
| 38 | 0.5826 | 0.7168 | 1.3951 | 0.8128 | 22 |
| 39 | 0.5828 | 0.7173 | 1.3942 | 0.8126 | 21 |
| 40 | 0.5831 | 0.7177 | 1.3934 | 0.8124 | 20 |
| 41 | 0.5833 | 0.7181 | 1.3925 | 0.8123 | 19 |
| 42 | 0.5835 | 0.7186 | 1.3916 | 0.8121 | 18 |
| 43 | 0.5838 | 0.7190 | 1.3908 | 0.8119 | 17 |
| 44 | 0.5840 | 0.7195 | 1.3899 | 0.8117 | 16 |
| 45 | 0.5842 | 0.7199 | 1.3891 | 0.8116 | 15 |
| 46 | 0.5845 | 0.7203 | 1.3882 | 0.8114 | 14 |
| 47 | 0.5847 | 0.7208 | 1.3874 | 0.8112 | 13 |
| 48 | 0.5850 | 0.7212 | 1.3865 | 0.8111 | 12 |
| 49 | 0.5852 | 0.7217 | 1.3857 | 0.8109 | 11 |
| 50 | 0.5854 | 0.7221 | 1.3848 | 0.8107 | 10 |
| 51 | 0.5857 | 0.7226 | 1.3840 | 0.8106 | 9 |
| 52 | 0.5859 | 0.7230 | 1.3831 | 0.8104 | 8 |
| 53 | 0.5861 | 0.7234 | 1.3823 | 0.8102 | 7 |
| 54 | 0.5864 | 0.7239 | 1.3814 | 0.8100 | 6 |
| 55 | 0.5866 | 0.7243 | 1.3806 | 0.8099 | 5 |
| 56 | 0.5868 | 0.7248 | 1.3798 | 0.8097 | 4 |
| 57 | 0.5871 | 0.7252 | 1.3789 | 0.8095 | 3 |
| 58 | 0.5873 | 0.7257 | 1.3781 | 0.8094 | 2 |
| 59 | 0.5875 | 0.7261 | 1.3772 | 0.8092 | 1 |
| 60 | 0.5878 | 0.7265 | 1.3764 | 0.8090 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.5878 | 0.7265 | 1.3764 | 0.8090 | 60 |
| 1 | 0.5880 | 0.7270 | 1.3755 | 0.8088 | 59 |
| 2 | 0.5883 | 0.7274 | 1.3747 | 0.8087 | 58 |
| 3 | 0.5885 | 0.7279 | 1.3739 | 0.8085 | 57 |
| 4 | 0.5887 | 0.7283 | 1.3730 | 0.8083 | 56 |
| 5 | 0.5890 | 0.7288 | 1.3722 | 0.8082 | 55 |
| 6 | 0.5892 | 0.7292 | 1.3713 | 0.8080 | 54 |
| 7 | 0.5894 | 0.7297 | 1.3705 | 0.8078 | 53 |
| 8 | 0.5897 | 0.7301 | 1.3697 | 0.8076 | 52 |
| 9 | 0.5899 | 0.7306 | 1.3688 | 0.8075 | 51 |
| 10 | 0.5901 | 0.7310 | 1.3680 | 0.8073 | 50 |
| 11 | 0.5904 | 0.7314 | 1.3672 | 0.8071 | 49 |
| 12 | 0.5906 | 0.7319 | 1.3663 | 0.8070 | 48 |
| 13 | 0.5908 | 0.7323 | 1.3655 | 0.8068 | 47 |
| 14 | 0.5911 | 0.7328 | 1.3647 | 0.8066 | 46 |
| 15 | 0.5913 | 0.7332 | 1.3638 | 0.8064 | 45 |
| 16 | 0.5915 | 0.7337 | 1.3630 | 0.8063 | 44 |
| 17 | 0.5918 | 0.7341 | 1.3622 | 0.8061 | 43 |
| 18 | 0.5920 | 0.7346 | 1.3613 | 0.8059 | 42 |
| 19 | 0.5922 | 0.7350 | 1.3605 | 0.8058 | 41 |
| 20 | 0.5925 | 0.7355 | 1.3597 | 0.8056 | 40 |
| 21 | 0.5927 | 0.7359 | 1.3588 | 0.8054 | 39 |
| 22 | 0.5930 | 0.7364 | 1.3580 | 0.8052 | 38 |
| 23 | 0.5932 | 0.7368 | 1.3572 | 0.8051 | 37 |
| 24 | 0.5934 | 0.7373 | 1.3564 | 0.8049 | 36 |
| 25 | 0.5937 | 0.7377 | 1.3555 | 0.8047 | 35 |
| 26 | 0.5939 | 0.7382 | 1.3547 | 0.8045 | 34 |
| 27 | 0.5941 | 0.7386 | 1.3539 | 0.8044 | 33 |
| 28 | 0.5944 | 0.7391 | 1.3531 | 0.8042 | 32 |
| 29 | 0.5946 | 0.7395 | 1.3522 | 0.8040 | 31 |
| 30 | 0.5948 | 0.7400 | 1.3514 | 0.8039 | 30 |
| 31 | 0.5951 | 0.7404 | 1.3506 | 0.8037 | 29 |
| 32 | 0.5953 | 0.7409 | 1.3498 | 0.8035 | 28 |
| 33 | 0.5955 | 0.7413 | 1.3490 | 0.8033 | 27 |
| 34 | 0.5958 | 0.7418 | 1.3481 | 0.8032 | 26 |
| 35 | 0.5960 | 0.7422 | 1.3473 | 0.8030 | 25 |
| 36 | 0.5962 | 0.7427 | 1.3465 | 0.8028 | 24 |
| 37 | 0.5965 | 0.7431 | 1.3457 | 0.8026 | 23 |
| 38 | 0.5967 | 0.7436 | 1.3449 | 0.8025 | 22 |
| 39 | 0.5969 | 0.7440 | 1.3440 | 0.8023 | 21 |
| 40 | 0.5972 | 0.7445 | 1.3432 | 0.8021 | 20 |
| 41 | 0.5974 | 0.7449 | 1.3424 | 0.8019 | 19 |
| 42 | 0.5976 | 0.7454 | 1.3416 | 0.8018 | 18 |
| 43 | 0.5979 | 0.7458 | 1.3408 | 0.8016 | 17 |
| 44 | 0.5981 | 0.7463 | 1.3400 | 0.8014 | 16 |
| 45 | 0.5983 | 0.7467 | 1.3392 | 0.8013 | 15 |
| 46 | 0.5986 | 0.7472 | 1.3384 | 0.8011 | 14 |
| 47 | 0.5988 | 0.7476 | 1.3375 | 0.8009 | 13 |
| 48 | 0.5990 | 0.7481 | 1.3367 | 0.8007 | 12 |
| 49 | 0.5993 | 0.7485 | 1.3359 | 0.8006 | 11 |
| 50 | 0.5995 | 0.7490 | 1.3351 | 0.8004 | 10 |
| 51 | 0.5997 | 0.7495 | 1.3343 | 0.8002 | 9 |
| 52 | 0.6000 | 0.7499 | 1.3335 | 0.8000 | 8 |
| 53 | 0.6002 | 0.7504 | 1.3327 | 0.7999 | 7 |
| 54 | 0.6004 | 0.7508 | 1.3319 | 0.7997 | 6 |
| 55 | 0.6007 | 0.7513 | 1.3311 | 0.7995 | 5 |
| 56 | 0.6009 | 0.7517 | 1.3303 | 0.7993 | 4 |
| 57 | 0.6011 | 0.7522 | 1.3295 | 0.7992 | 3 |
| 58 | 0.6014 | 0.7526 | 1.3287 | 0.7990 | 2 |
| 59 | 0.6016 | 0.7531 | 1.3278 | 0.7988 | 1 |
| 60 | 0.6018 | 0.7536 | 1.3270 | 0.7986 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6018 | 0.7536 | 1.3270 | 0.7986 | 60 |
| 1 | 0.6020 | 0.7540 | 1.3262 | 0.7985 | 59 |
| 2 | 0.6023 | 0.7545 | 1.3254 | 0.7983 | 58 |
| 3 | 0.6025 | 0.7549 | 1.3246 | 0.7981 | 57 |
| 4 | 0.6027 | 0.7554 | 1.3238 | 0.7979 | 56 |
| 5 | 0.6030 | 0.7558 | 1.3230 | 0.7978 | 55 |
| 6 | 0.6032 | 0.7563 | 1.3222 | 0.7976 | 54 |
| 7 | 0.6034 | 0.7568 | 1.3214 | 0.7974 | 53 |
| 8 | 0.6037 | 0.7572 | 1.3206 | 0.7972 | 52 |
| 9 | 0.6039 | 0.7577 | 1.3198 | 0.7971 | 51 |
| 10 | 0.6041 | 0.7581 | 1.3190 | 0.7969 | 50 |
| 11 | 0.6044 | 0.7586 | 1.3182 | 0.7967 | 49 |
| 12 | 0.6046 | 0.7590 | 1.3175 | 0.7965 | 48 |
| 13 | 0.6048 | 0.7595 | 1.3167 | 0.7964 | 47 |
| 14 | 0.6051 | 0.7600 | 1.3159 | 0.7962 | 46 |
| 15 | 0.6053 | 0.7604 | 1.3151 | 0.7960 | 45 |
| 16 | 0.6055 | 0.7609 | 1.3143 | 0.7958 | 44 |
| 17 | 0.6058 | 0.7613 | 1.3135 | 0.7956 | 43 |
| 18 | 0.6060 | 0.7618 | 1.3127 | 0.7955 | 42 |
| 19 | 0.6062 | 0.7623 | 1.3119 | 0.7953 | 41 |
| 20 | 0.6065 | 0.7627 | 1.3111 | 0.7951 | 40 |
| 21 | 0.6067 | 0.7632 | 1.3103 | 0.7949 | 39 |
| 22 | 0.6069 | 0.7636 | 1.3095 | 0.7948 | 38 |
| 23 | 0.6071 | 0.7641 | 1.3087 | 0.7946 | 37 |
| 24 | 0.6074 | 0.7646 | 1.3079 | 0.7944 | 36 |
| 25 | 0.6076 | 0.7650 | 1.3072 | 0.7942 | 35 |
| 26 | 0.6078 | 0.7655 | 1.3064 | 0.7941 | 34 |
| 27 | 0.6081 | 0.7659 | 1.3056 | 0.7939 | 33 |
| 28 | 0.6083 | 0.7664 | 1.3048 | 0.7937 | 32 |
| 29 | 0.6085 | 0.7669 | 1.3040 | 0.7935 | 31 |
| 30 | 0.6088 | 0.7673 | 1.3032 | 0.7934 | 30 |
| 31 | 0.6090 | 0.7678 | 1.3024 | 0.7932 | 29 |
| 32 | 0.6092 | 0.7683 | 1.3017 | 0.7930 | 28 |
| 33 | 0.6095 | 0.7687 | 1.3009 | 0.7928 | 27 |
| 34 | 0.6097 | 0.7692 | 1.3001 | 0.7926 | 26 |
| 35 | 0.6099 | 0.7696 | 1.2993 | 0.7925 | 25 |
| 36 | 0.6101 | 0.7701 | 1.2985 | 0.7923 | 24 |
| 37 | 0.6104 | 0.7706 | 1.2977 | 0.7921 | 23 |
| 38 | 0.6106 | 0.7710 | 1.2970 | 0.7919 | 22 |
| 39 | 0.6108 | 0.7715 | 1.2962 | 0.7918 | 21 |
| 40 | 0.6111 | 0.7720 | 1.2954 | 0.7916 | 20 |
| 41 | 0.6113 | 0.7724 | 1.2946 | 0.7914 | 19 |
| 42 | 0.6115 | 0.7729 | 1.2938 | 0.7912 | 18 |
| 43 | 0.6118 | 0.7734 | 1.2931 | 0.7910 | 17 |
| 44 | 0.6120 | 0.7738 | 1.2923 | 0.7909 | 16 |
| 45 | 0.6122 | 0.7743 | 1.2915 | 0.7907 | 15 |
| 46 | 0.6124 | 0.7747 | 1.2907 | 0.7905 | 14 |
| 47 | 0.6127 | 0.7752 | 1.2900 | 0.7903 | 13 |
| 48 | 0.6129 | 0.7757 | 1.2892 | 0.7902 | 12 |
| 49 | 0.6131 | 0.7761 | 1.2884 | 0.7900 | 11 |
| 50 | 0.6134 | 0.7766 | 1.2876 | 0.7898 | 10 |
| 51 | 0.6136 | 0.7771 | 1.2869 | 0.7896 | 9 |
| 52 | 0.6138 | 0.7775 | 1.2861 | 0.7894 | 8 |
| 53 | 0.6141 | 0.7780 | 1.2853 | 0.7893 | 7 |
| 54 | 0.6143 | 0.7785 | 1.2846 | 0.7891 | 6 |
| 55 | 0.6145 | 0.7789 | 1.2838 | 0.7889 | 5 |
| 56 | 0.6147 | 0.7794 | 1.2830 | 0.7887 | 4 |
| 57 | 0.6150 | 0.7799 | 1.2822 | 0.7885 | 3 |
| 58 | 0.6152 | 0.7803 | 1.2815 | 0.7884 | 2 |
| 59 | 0.6154 | 0.7808 | 1.2807 | 0.7882 | 1 |
| 60 | 0.6157 | 0.7813 | 1.2799 | 0.7880 | 0 |
| | Cos | Cot | Tan | Sin | |

*128° 218° *308°

38°

NATURAL

39°

*129° 219° *309°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6157 | 0.7813 | 1.2799 | 0.7880 | 60 |
| 1 | 0.6159 | 0.7818 | 1.2792 | 0.7878 | 59 |
| 2 | 0.6161 | 0.7822 | 1.2784 | 0.7877 | 58 |
| 3 | 0.6163 | 0.7827 | 1.2776 | 0.7875 | 57 |
| 4 | 0.6166 | 0.7832 | 1.2769 | 0.7873 | 56 |
| 5 | 0.6168 | 0.7836 | 1.2761 | 0.7871 | 55 |
| 6 | 0.6170 | 0.7841 | 1.2753 | 0.7869 | 54 |
| 7 | 0.6173 | 0.7846 | 1.2746 | 0.7868 | 53 |
| 8 | 0.6175 | 0.7850 | 1.2738 | 0.7866 | 52 |
| 9 | 0.6177 | 0.7855 | 1.2731 | 0.7864 | 51 |
| 10 | 0.6180 | 0.7860 | 1.2723 | 0.7862 | 50 |
| 11 | 0.6182 | 0.7865 | 1.2715 | 0.7860 | 49 |
| 12 | 0.6184 | 0.7869 | 1.2708 | 0.7859 | 48 |
| 13 | 0.6186 | 0.7874 | 1.2700 | 0.7857 | 47 |
| 14 | 0.6189 | 0.7879 | 1.2693 | 0.7855 | 46 |
| 15 | 0.6191 | 0.7883 | 1.2685 | 0.7853 | 45 |
| 16 | 0.6193 | 0.7888 | 1.2677 | 0.7851 | 44 |
| 17 | 0.6196 | 0.7893 | 1.2670 | 0.7850 | 43 |
| 18 | 0.6198 | 0.7898 | 1.2662 | 0.7848 | 42 |
| 19 | 0.6200 | 0.7902 | 1.2655 | 0.7846 | 41 |
| 20 | 0.6202 | 0.7907 | 1.2647 | 0.7844 | 40 |
| 21 | 0.6205 | 0.7912 | 1.2640 | 0.7842 | 39 |
| 22 | 0.6207 | 0.7916 | 1.2632 | 0.7841 | 38 |
| 23 | 0.6209 | 0.7921 | 1.2624 | 0.7839 | 37 |
| 24 | 0.6211 | 0.7926 | 1.2617 | 0.7837 | 36 |
| 25 | 0.6214 | 0.7931 | 1.2609 | 0.7835 | 35 |
| 26 | 0.6216 | 0.7935 | 1.2602 | 0.7833 | 34 |
| 27 | 0.6218 | 0.7940 | 1.2594 | 0.7832 | 33 |
| 28 | 0.6221 | 0.7945 | 1.2587 | 0.7830 | 32 |
| 29 | 0.6223 | 0.7950 | 1.2579 | 0.7828 | 31 |
| 30 | 0.6225 | 0.7954 | 1.2572 | 0.7826 | 30 |
| 31 | 0.6227 | 0.7959 | 1.2564 | 0.7824 | 29 |
| 32 | 0.6230 | 0.7964 | 1.2557 | 0.7822 | 28 |
| 33 | 0.6232 | 0.7969 | 1.2549 | 0.7821 | 27 |
| 34 | 0.6234 | 0.7973 | 1.2542 | 0.7819 | 26 |
| 35 | 0.6237 | 0.7978 | 1.2534 | 0.7817 | 25 |
| 36 | 0.6239 | 0.7983 | 1.2527 | 0.7815 | 24 |
| 37 | 0.6241 | 0.7988 | 1.2519 | 0.7813 | 23 |
| 38 | 0.6243 | 0.7992 | 1.2512 | 0.7812 | 22 |
| 39 | 0.6246 | 0.7997 | 1.2504 | 0.7810 | 21 |
| 40 | 0.6248 | 0.8002 | 1.2497 | 0.7808 | 20 |
| 41 | 0.6250 | 0.8007 | 1.2489 | 0.7806 | 19 |
| 42 | 0.6252 | 0.8012 | 1.2482 | 0.7804 | 18 |
| 43 | 0.6255 | 0.8016 | 1.2475 | 0.7802 | 17 |
| 44 | 0.6257 | 0.8021 | 1.2467 | 0.7801 | 16 |
| 45 | 0.6259 | 0.8026 | 1.2460 | 0.7799 | 15 |
| 46 | 0.6262 | 0.8031 | 1.2452 | 0.7797 | 14 |
| 47 | 0.6264 | 0.8035 | 1.2445 | 0.7795 | 13 |
| 48 | 0.6266 | 0.8040 | 1.2437 | 0.7793 | 12 |
| 49 | 0.6268 | 0.8045 | 1.2430 | 0.7792 | 11 |
| 50 | 0.6271 | 0.8050 | 1.2423 | 0.7790 | 10 |
| 51 | 0.6273 | 0.8055 | 1.2415 | 0.7788 | 9 |
| 52 | 0.6275 | 0.8059 | 1.2408 | 0.7786 | 8 |
| 53 | 0.6277 | 0.8064 | 1.2401 | 0.7784 | 7 |
| 54 | 0.6280 | 0.8069 | 1.2393 | 0.7782 | 6 |
| 55 | 0.6282 | 0.8074 | 1.2386 | 0.7781 | 5 |
| 56 | 0.6284 | 0.8079 | 1.2378 | 0.7779 | 4 |
| 57 | 0.6286 | 0.8083 | 1.2371 | 0.7777 | 3 |
| 58 | 0.6289 | 0.8088 | 1.2364 | 0.7775 | 2 |
| 59 | 0.6291 | 0.8093 | 1.2356 | 0.7773 | 1 |
| 60 | 0.6293 | 0.8098 | 1.2349 | 0.7771 | 0 |
| | Cos | Cot | Tan | Sin | |

*141° 231° *321°

51°

NATURAL

50°

*140° 230° *320°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6293 | 0.8098 | 1.2349 | 0.7771 | 60 |
| 1 | 0.6295 | 0.8103 | 1.2342 | 0.7770 | 59 |
| 2 | 0.6298 | 0.8107 | 1.2334 | 0.7768 | 58 |
| 3 | 0.6300 | 0.8112 | 1.2327 | 0.7766 | 57 |
| 4 | 0.6302 | 0.8117 | 1.2320 | 0.7764 | 56 |
| 5 | 0.6305 | 0.8122 | 1.2312 | 0.7762 | 55 |
| 6 | 0.6307 | 0.8127 | 1.2305 | 0.7760 | 54 |
| 7 | 0.6309 | 0.8132 | 1.2298 | 0.7759 | 53 |
| 8 | 0.6311 | 0.8136 | 1.2290 | 0.7757 | 52 |
| 9 | 0.6314 | 0.8141 | 1.2283 | 0.7755 | 51 |
| 10 | 0.6316 | 0.8146 | 1.2276 | 0.7753 | 50 |
| 11 | 0.6318 | 0.8151 | 1.2268 | 0.7751 | 49 |
| 12 | 0.6320 | 0.8156 | 1.2261 | 0.7749 | 48 |
| 13 | 0.6323 | 0.8161 | 1.2254 | 0.7748 | 47 |
| 14 | 0.6325 | 0.8165 | 1.2247 | 0.7746 | 46 |
| 15 | 0.6327 | 0.8170 | 1.2239 | 0.7744 | 45 |
| 16 | 0.6329 | 0.8175 | 1.2232 | 0.7742 | 44 |
| 17 | 0.6332 | 0.8180 | 1.2225 | 0.7740 | 43 |
| 18 | 0.6334 | 0.8185 | 1.2218 | 0.7738 | 42 |
| 19 | 0.6336 | 0.8190 | 1.2210 | 0.7737 | 41 |
| 20 | 0.6338 | 0.8195 | 1.2203 | 0.7735 | 40 |
| 21 | 0.6341 | 0.8199 | 1.2196 | 0.7733 | 39 |
| 22 | 0.6343 | 0.8204 | 1.2189 | 0.7731 | 38 |
| 23 | 0.6345 | 0.8209 | 1.2181 | 0.7729 | 37 |
| 24 | 0.6347 | 0.8214 | 1.2174 | 0.7727 | 36 |
| 25 | 0.6350 | 0.8219 | 1.2167 | 0.7725 | 35 |
| 26 | 0.6352 | 0.8224 | 1.2160 | 0.7724 | 34 |
| 27 | 0.6354 | 0.8229 | 1.2153 | 0.7722 | 33 |
| 28 | 0.6356 | 0.8234 | 1.2145 | 0.7720 | 32 |
| 29 | 0.6359 | 0.8238 | 1.2138 | 0.7718 | 31 |
| 30 | 0.6361 | 0.8243 | 1.2131 | 0.7716 | 30 |
| 31 | 0.6363 | 0.8248 | 1.2124 | 0.7714 | 29 |
| 32 | 0.6365 | 0.8253 | 1.2117 | 0.7713 | 28 |
| 33 | 0.6368 | 0.8258 | 1.2109 | 0.7711 | 27 |
| 34 | 0.6370 | 0.8263 | 1.2102 | 0.7709 | 26 |
| 35 | 0.6372 | 0.8268 | 1.2095 | 0.7707 | 25 |
| 36 | 0.6374 | 0.8273 | 1.2088 | 0.7705 | 24 |
| 37 | 0.6376 | 0.8278 | 1.2081 | 0.7703 | 23 |
| 38 | 0.6379 | 0.8283 | 1.2074 | 0.7701 | 22 |
| 39 | 0.6381 | 0.8287 | 1.2066 | 0.7700 | 21 |
| 40 | 0.6383 | 0.8292 | 1.2059 | 0.7698 | 20 |
| 41 | 0.6385 | 0.8297 | 1.2052 | 0.7696 | 19 |
| 42 | 0.6388 | 0.8302 | 1.2045 | 0.7694 | 18 |
| 43 | 0.6390 | 0.8307 | 1.2038 | 0.7692 | 17 |
| 44 | 0.6392 | 0.8312 | 1.2031 | 0.7690 | 16 |
| 45 | 0.6394 | 0.8317 | 1.2024 | 0.7688 | 15 |
| 46 | 0.6397 | 0.8322 | 1.2017 | 0.7687 | 14 |
| 47 | 0.6399 | 0.8327 | 1.2009 | 0.7685 | 13 |
| 48 | 0.6401 | 0.8332 | 1.2002 | 0.7683 | 12 |
| 49 | 0.6403 | 0.8337 | 1.1995 | 0.7681 | 11 |
| 50 | 0.6406 | 0.8342 | 1.1988 | 0.7679 | 10 |
| 51 | 0.6408 | 0.8346 | 1.1981 | 0.7677 | 9 |
| 52 | 0.6410 | 0.8351 | 1.1974 | 0.7675 | 8 |
| 53 | 0.6412 | 0.8356 | 1.1967 | 0.7674 | 7 |
| 54 | 0.6414 | 0.8361 | 1.1960 | 0.7672 | 6 |
| 55 | 0.6417 | 0.8366 | 1.1953 | 0.7670 | 5 |
| 56 | 0.6419 | 0.8371 | 1.1946 | 0.7668 | 4 |
| 57 | 0.6421 | 0.8376 | 1.1939 | 0.7666 | 3 |
| 58 | 0.6423 | 0.8381 | 1.1932 | 0.7664 | 2 |
| 59 | 0.6426 | 0.8386 | 1.1925 | 0.7662 | 1 |
| 60 | 0.6428 | 0.8391 | 1.1918 | 0.7660 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6428 | 0.8391 | 1.1618 | 0.7660 | 60 |
| 1 | 0.6430 | 0.8396 | 1.1610 | 0.7659 | 59 |
| 2 | 0.6432 | 0.8401 | 1.1603 | 0.7657 | 58 |
| 3 | 0.6435 | 0.8406 | 1.1596 | 0.7655 | 57 |
| 4 | 0.6437 | 0.8411 | 1.1589 | 0.7653 | 56 |
| 5 | 0.6439 | 0.8416 | 1.1582 | 0.7651 | 55 |
| 6 | 0.6441 | 0.8421 | 1.1575 | 0.7649 | 54 |
| 7 | 0.6443 | 0.8426 | 1.1568 | 0.7647 | 53 |
| 8 | 0.6446 | 0.8431 | 1.1561 | 0.7645 | 52 |
| 9 | 0.6448 | 0.8436 | 1.1554 | 0.7644 | 51 |
| 10 | 0.6450 | 0.8441 | 1.1547 | 0.7642 | 50 |
| 11 | 0.6452 | 0.8446 | 1.1540 | 0.7640 | 49 |
| 12 | 0.6455 | 0.8451 | 1.1533 | 0.7638 | 48 |
| 13 | 0.6457 | 0.8456 | 1.1526 | 0.7636 | 47 |
| 14 | 0.6459 | 0.8461 | 1.1519 | 0.7634 | 46 |
| 15 | 0.6461 | 0.8466 | 1.1512 | 0.7632 | 45 |
| 16 | 0.6463 | 0.8471 | 1.1506 | 0.7630 | 44 |
| 17 | 0.6466 | 0.8476 | 1.1499 | 0.7629 | 43 |
| 18 | 0.6468 | 0.8481 | 1.1492 | 0.7627 | 42 |
| 19 | 0.6470 | 0.8486 | 1.1485 | 0.7625 | 41 |
| 20 | 0.6472 | 0.8491 | 1.1478 | 0.7623 | 40 |
| 21 | 0.6475 | 0.8496 | 1.1471 | 0.7621 | 39 |
| 22 | 0.6477 | 0.8501 | 1.1464 | 0.7619 | 38 |
| 23 | 0.6479 | 0.8506 | 1.1457 | 0.7617 | 37 |
| 24 | 0.6481 | 0.8511 | 1.1450 | 0.7615 | 36 |
| 25 | 0.6483 | 0.8516 | 1.1443 | 0.7613 | 35 |
| 26 | 0.6486 | 0.8521 | 1.1436 | 0.7612 | 34 |
| 27 | 0.6488 | 0.8526 | 1.1429 | 0.7610 | 33 |
| 28 | 0.6490 | 0.8531 | 1.1422 | 0.7608 | 32 |
| 29 | 0.6492 | 0.8536 | 1.1415 | 0.7606 | 31 |
| 30 | 0.6494 | 0.8541 | 1.1408 | 0.7604 | 30 |
| 31 | 0.6497 | 0.8546 | 1.1402 | 0.7602 | 29 |
| 32 | 0.6499 | 0.8551 | 1.1395 | 0.7600 | 28 |
| 33 | 0.6501 | 0.8556 | 1.1388 | 0.7598 | 27 |
| 34 | 0.6503 | 0.8561 | 1.1381 | 0.7596 | 26 |
| 35 | 0.6506 | 0.8566 | 1.1374 | 0.7595 | 25 |
| 36 | 0.6508 | 0.8571 | 1.1367 | 0.7593 | 24 |
| 37 | 0.6510 | 0.8576 | 1.1360 | 0.7591 | 23 |
| 38 | 0.6512 | 0.8581 | 1.1353 | 0.7589 | 22 |
| 39 | 0.6514 | 0.8586 | 1.1347 | 0.7587 | 21 |
| 40 | 0.6517 | 0.8591 | 1.1340 | 0.7585 | 20 |
| 41 | 0.6519 | 0.8596 | 1.1333 | 0.7583 | 19 |
| 42 | 0.6521 | 0.8601 | 1.1326 | 0.7581 | 18 |
| 43 | 0.6523 | 0.8606 | 1.1319 | 0.7579 | 17 |
| 44 | 0.6525 | 0.8611 | 1.1312 | 0.7578 | 16 |
| 45 | 0.6528 | 0.8617 | 1.1306 | 0.7576 | 15 |
| 46 | 0.6530 | 0.8622 | 1.1299 | 0.7574 | 14 |
| 47 | 0.6532 | 0.8627 | 1.1292 | 0.7572 | 13 |
| 48 | 0.6534 | 0.8632 | 1.1285 | 0.7570 | 12 |
| 49 | 0.6536 | 0.8637 | 1.1278 | 0.7568 | 11 |
| 50 | 0.6539 | 0.8642 | 1.1271 | 0.7566 | 10 |
| 51 | 0.6541 | 0.8647 | 1.1265 | 0.7564 | 9 |
| 52 | 0.6543 | 0.8652 | 1.1258 | 0.7562 | 8 |
| 53 | 0.6545 | 0.8657 | 1.1251 | 0.7560 | 7 |
| 54 | 0.6547 | 0.8662 | 1.1244 | 0.7559 | 6 |
| 55 | 0.6550 | 0.8667 | 1.1238 | 0.7557 | 5 |
| 56 | 0.6552 | 0.8672 | 1.1231 | 0.7555 | 4 |
| 57 | 0.6554 | 0.8678 | 1.1224 | 0.7553 | 3 |
| 58 | 0.6556 | 0.8683 | 1.1217 | 0.7551 | 2 |
| 59 | 0.6558 | 0.8688 | 1.1210 | 0.7549 | 1 |
| 60 | 0.6561 | 0.8693 | 1.1204 | 0.7547 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6561 | 0.8693 | 1.1504 | 0.7547 | 60 |
| 1 | 0.6563 | 0.8698 | 1.1497 | 0.7545 | 59 |
| 2 | 0.6565 | 0.8703 | 1.1490 | 0.7543 | 58 |
| 3 | 0.6567 | 0.8708 | 1.1483 | 0.7541 | 57 |
| 4 | 0.6569 | 0.8713 | 1.1477 | 0.7539 | 56 |
| 5 | 0.6572 | 0.8718 | 1.1470 | 0.7538 | 55 |
| 6 | 0.6574 | 0.8724 | 1.1463 | 0.7536 | 54 |
| 7 | 0.6576 | 0.8729 | 1.1456 | 0.7534 | 53 |
| 8 | 0.6578 | 0.8734 | 1.1450 | 0.7532 | 52 |
| 9 | 0.6580 | 0.8739 | 1.1443 | 0.7530 | 51 |
| 10 | 0.6583 | 0.8744 | 1.1436 | 0.7528 | 50 |
| 11 | 0.6585 | 0.8749 | 1.1430 | 0.7526 | 49 |
| 12 | 0.6587 | 0.8754 | 1.1423 | 0.7524 | 48 |
| 13 | 0.6589 | 0.8759 | 1.1416 | 0.7522 | 47 |
| 14 | 0.6591 | 0.8765 | 1.1410 | 0.7520 | 46 |
| 15 | 0.6593 | 0.8770 | 1.1403 | 0.7518 | 45 |
| 16 | 0.6596 | 0.8775 | 1.1396 | 0.7516 | 44 |
| 17 | 0.6598 | 0.8780 | 1.1389 | 0.7515 | 43 |
| 18 | 0.6600 | 0.8785 | 1.1383 | 0.7513 | 42 |
| 19 | 0.6602 | 0.8790 | 1.1376 | 0.7511 | 41 |
| 20 | 0.6604 | 0.8796 | 1.1369 | 0.7509 | 40 |
| 21 | 0.6607 | 0.8801 | 1.1363 | 0.7507 | 39 |
| 22 | 0.6609 | 0.8806 | 1.1356 | 0.7505 | 38 |
| 23 | 0.6611 | 0.8811 | 1.1349 | 0.7503 | 37 |
| 24 | 0.6613 | 0.8816 | 1.1343 | 0.7501 | 36 |
| 25 | 0.6615 | 0.8821 | 1.1336 | 0.7499 | 35 |
| 26 | 0.6617 | 0.8827 | 1.1329 | 0.7497 | 34 |
| 27 | 0.6620 | 0.8832 | 1.1323 | 0.7495 | 33 |
| 28 | 0.6622 | 0.8837 | 1.1316 | 0.7493 | 32 |
| 29 | 0.6624 | 0.8842 | 1.1310 | 0.7491 | 31 |
| 30 | 0.6626 | 0.8847 | 1.1303 | 0.7490 | 30 |
| 31 | 0.6628 | 0.8852 | 1.1296 | 0.7488 | 29 |
| 32 | 0.6631 | 0.8858 | 1.1290 | 0.7486 | 28 |
| 33 | 0.6633 | 0.8863 | 1.1283 | 0.7484 | 27 |
| 34 | 0.6635 | 0.8868 | 1.1276 | 0.7482 | 26 |
| 35 | 0.6637 | 0.8873 | 1.1270 | 0.7480 | 25 |
| 36 | 0.6639 | 0.8878 | 1.1263 | 0.7478 | 24 |
| 37 | 0.6641 | 0.8884 | 1.1257 | 0.7476 | 23 |
| 38 | 0.6644 | 0.8889 | 1.1250 | 0.7474 | 22 |
| 39 | 0.6646 | 0.8894 | 1.1243 | 0.7472 | 21 |
| 40 | 0.6648 | 0.8899 | 1.1237 | 0.7470 | 20 |
| 41 | 0.6650 | 0.8904 | 1.1230 | 0.7468 | 19 |
| 42 | 0.6652 | 0.8910 | 1.1224 | 0.7466 | 18 |
| 43 | 0.6654 | 0.8915 | 1.1217 | 0.7464 | 17 |
| 44 | 0.6657 | 0.8920 | 1.1211 | 0.7463 | 16 |
| 45 | 0.6659 | 0.8925 | 1.1204 | 0.7461 | 15 |
| 46 | 0.6661 | 0.8931 | 1.1197 | 0.7459 | 14 |
| 47 | 0.6663 | 0.8936 | 1.1191 | 0.7457 | 13 |
| 48 | 0.6665 | 0.8941 | 1.1184 | 0.7455 | 12 |
| 49 | 0.6667 | 0.8946 | 1.1178 | 0.7453 | 11 |
| 50 | 0.6670 | 0.8952 | 1.1171 | 0.7451 | 10 |
| 51 | 0.6672 | 0.8957 | 1.1165 | 0.7449 | 9 |
| 52 | 0.6674 | 0.8962 | 1.1158 | 0.7447 | 8 |
| 53 | 0.6676 | 0.8967 | 1.1152 | 0.7445 | 7 |
| 54 | 0.6678 | 0.8972 | 1.1145 | 0.7443 | 6 |
| 55 | 0.6680 | 0.8978 | 1.1139 | 0.7441 | 5 |
| 56 | 0.6683 | 0.8983 | 1.1132 | 0.7439 | 4 |
| 57 | 0.6685 | 0.8988 | 1.1126 | 0.7437 | 3 |
| 58 | 0.6687 | 0.8994 | 1.1119 | 0.7435 | 2 |
| 59 | 0.6689 | 0.8999 | 1.1113 | 0.7433 | 1 |
| 60 | 0.6691 | 0.9004 | 1.1106 | 0.7431 | 0 |
| | Cos | Cot | Tan | Sin | |

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*133° 223° *313°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6691 | 0.9004 | 1.1106 | 0.7431 | 60 |
| 1 | 0.6693 | 0.9009 | 1.1100 | 0.7430 | 59 |
| 2 | 0.6696 | 0.9015 | 1.1093 | 0.7428 | 58 |
| 3 | 0.6698 | 0.9020 | 1.1087 | 0.7426 | 57 |
| 4 | 0.6700 | 0.9025 | 1.1080 | 0.7424 | 56 |
| 5 | 0.6702 | 0.9030 | 1.1074 | 0.7422 | 55 |
| 6 | 0.6704 | 0.9036 | 1.1067 | 0.7420 | 54 |
| 7 | 0.6706 | 0.9041 | 1.1061 | 0.7418 | 53 |
| 8 | 0.6709 | 0.9046 | 1.1054 | 0.7416 | 52 |
| 9 | 0.6711 | 0.9052 | 1.1048 | 0.7414 | 51 |
| 10 | 0.6713 | 0.9057 | 1.1041 | 0.7412 | 50 |
| 11 | 0.6715 | 0.9062 | 1.1035 | 0.7410 | 49 |
| 12 | 0.6717 | 0.9067 | 1.1028 | 0.7408 | 48 |
| 13 | 0.6719 | 0.9073 | 1.1022 | 0.7406 | 47 |
| 14 | 0.6722 | 0.9078 | 1.1016 | 0.7404 | 46 |
| 15 | 0.6724 | 0.9083 | 1.1009 | 0.7402 | 45 |
| 16 | 0.6726 | 0.9089 | 1.1003 | 0.7400 | 44 |
| 17 | 0.6728 | 0.9094 | 1.0996 | 0.7398 | 43 |
| 18 | 0.6730 | 0.9099 | 1.0990 | 0.7396 | 42 |
| 19 | 0.6732 | 0.9105 | 1.0983 | 0.7394 | 41 |
| 20 | 0.6734 | 0.9110 | 1.0977 | 0.7392 | 40 |
| 21 | 0.6737 | 0.9115 | 1.0971 | 0.7390 | 39 |
| 22 | 0.6739 | 0.9121 | 1.0964 | 0.7388 | 38 |
| 23 | 0.6741 | 0.9126 | 1.0958 | 0.7387 | 37 |
| 24 | 0.6743 | 0.9131 | 1.0951 | 0.7385 | 36 |
| 25 | 0.6745 | 0.9137 | 1.0945 | 0.7383 | 35 |
| 26 | 0.6747 | 0.9142 | 1.0939 | 0.7381 | 34 |
| 27 | 0.6749 | 0.9147 | 1.0932 | 0.7379 | 33 |
| 28 | 0.6752 | 0.9153 | 1.0926 | 0.7377 | 32 |
| 29 | 0.6754 | 0.9158 | 1.0919 | 0.7375 | 31 |
| 30 | 0.6756 | 0.9163 | 1.0913 | 0.7373 | 30 |
| 31 | 0.6758 | 0.9169 | 1.0907 | 0.7371 | 29 |
| 32 | 0.6760 | 0.9174 | 1.0900 | 0.7369 | 28 |
| 33 | 0.6762 | 0.9179 | 1.0894 | 0.7367 | 27 |
| 34 | 0.6764 | 0.9185 | 1.0888 | 0.7365 | 26 |
| 35 | 0.6767 | 0.9190 | 1.0881 | 0.7363 | 25 |
| 36 | 0.6769 | 0.9195 | 1.0875 | 0.7361 | 24 |
| 37 | 0.6771 | 0.9201 | 1.0869 | 0.7359 | 23 |
| 38 | 0.6773 | 0.9206 | 1.0862 | 0.7357 | 22 |
| 39 | 0.6775 | 0.9212 | 1.0856 | 0.7355 | 21 |
| 40 | 0.6777 | 0.9217 | 1.0850 | 0.7353 | 20 |
| 41 | 0.6779 | 0.9222 | 1.0843 | 0.7351 | 19 |
| 42 | 0.6782 | 0.9228 | 1.0837 | 0.7349 | 18 |
| 43 | 0.6784 | 0.9233 | 1.0831 | 0.7347 | 17 |
| 44 | 0.6786 | 0.9239 | 1.0824 | 0.7345 | 16 |
| 45 | 0.6788 | 0.9244 | 1.0818 | 0.7343 | 15 |
| 46 | 0.6790 | 0.9249 | 1.0812 | 0.7341 | 14 |
| 47 | 0.6792 | 0.9255 | 1.0805 | 0.7339 | 13 |
| 48 | 0.6794 | 0.9260 | 1.0799 | 0.7337 | 12 |
| 49 | 0.6797 | 0.9266 | 1.0793 | 0.7335 | 11 |
| 50 | 0.6799 | 0.9271 | 1.0786 | 0.7333 | 10 |
| 51 | 0.6801 | 0.9276 | 1.0780 | 0.7331 | 9 |
| 52 | 0.6803 | 0.9282 | 1.0774 | 0.7329 | 8 |
| 53 | 0.6805 | 0.9287 | 1.0768 | 0.7327 | 7 |
| 54 | 0.6807 | 0.9293 | 1.0761 | 0.7325 | 6 |
| 55 | 0.6809 | 0.9298 | 1.0755 | 0.7323 | 5 |
| 56 | 0.6811 | 0.9303 | 1.0749 | 0.7321 | 4 |
| 57 | 0.6814 | 0.9309 | 1.0742 | 0.7319 | 3 |
| 58 | 0.6816 | 0.9314 | 1.0736 | 0.7318 | 2 |
| 59 | 0.6818 | 0.9320 | 1.0730 | 0.7316 | 1 |
| 60 | 0.6820 | 0.9325 | 1.0724 | 0.7314 | 0 |
| | Cos | Cot | Tan | Sin | |

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NATURAL

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*136° 226° *316°

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6820 | 0.9325 | 1.0724 | 0.7314 | 60 |
| 1 | 0.6822 | 0.9331 | 1.0717 | 0.7312 | 59 |
| 2 | 0.6824 | 0.9336 | 1.0711 | 0.7310 | 58 |
| 3 | 0.6826 | 0.9341 | 1.0705 | 0.7308 | 57 |
| 4 | 0.6828 | 0.9347 | 1.0699 | 0.7306 | 56 |
| 5 | 0.6831 | 0.9352 | 1.0692 | 0.7304 | 55 |
| 6 | 0.6833 | 0.9358 | 1.0686 | 0.7302 | 54 |
| 7 | 0.6835 | 0.9363 | 1.0680 | 0.7300 | 53 |
| 8 | 0.6837 | 0.9369 | 1.0674 | 0.7298 | 52 |
| 9 | 0.6839 | 0.9374 | 1.0668 | 0.7296 | 51 |
| 10 | 0.6841 | 0.9380 | 1.0661 | 0.7294 | 50 |
| 11 | 0.6843 | 0.9385 | 1.0655 | 0.7292 | 49 |
| 12 | 0.6845 | 0.9391 | 1.0649 | 0.7290 | 48 |
| 13 | 0.6848 | 0.9396 | 1.0643 | 0.7288 | 47 |
| 14 | 0.6850 | 0.9402 | 1.0637 | 0.7286 | 46 |
| 15 | 0.6852 | 0.9407 | 1.0630 | 0.7284 | 45 |
| 16 | 0.6854 | 0.9413 | 1.0624 | 0.7282 | 44 |
| 17 | 0.6856 | 0.9418 | 1.0618 | 0.7280 | 43 |
| 18 | 0.6858 | 0.9424 | 1.0612 | 0.7278 | 42 |
| 19 | 0.6860 | 0.9429 | 1.0606 | 0.7276 | 41 |
| 20 | 0.6862 | 0.9435 | 1.0599 | 0.7274 | 40 |
| 21 | 0.6865 | 0.9440 | 1.0593 | 0.7272 | 39 |
| 22 | 0.6867 | 0.9446 | 1.0587 | 0.7270 | 38 |
| 23 | 0.6869 | 0.9451 | 1.0581 | 0.7268 | 37 |
| 24 | 0.6871 | 0.9457 | 1.0575 | 0.7266 | 36 |
| 25 | 0.6873 | 0.9462 | 1.0569 | 0.7264 | 35 |
| 26 | 0.6875 | 0.9468 | 1.0562 | 0.7262 | 34 |
| 27 | 0.6877 | 0.9473 | 1.0556 | 0.7260 | 33 |
| 28 | 0.6879 | 0.9479 | 1.0550 | 0.7258 | 32 |
| 29 | 0.6881 | 0.9484 | 1.0544 | 0.7256 | 31 |
| 30 | 0.6884 | 0.9490 | 1.0538 | 0.7254 | 30 |
| 31 | 0.6886 | 0.9495 | 1.0532 | 0.7252 | 29 |
| 32 | 0.6888 | 0.9501 | 1.0526 | 0.7250 | 28 |
| 33 | 0.6890 | 0.9506 | 1.0519 | 0.7248 | 27 |
| 34 | 0.6892 | 0.9512 | 1.0513 | 0.7246 | 26 |
| 35 | 0.6894 | 0.9517 | 1.0507 | 0.7244 | 25 |
| 36 | 0.6896 | 0.9523 | 1.0501 | 0.7242 | 24 |
| 37 | 0.6898 | 0.9528 | 1.0495 | 0.7240 | 23 |
| 38 | 0.6900 | 0.9534 | 1.0489 | 0.7238 | 22 |
| 39 | 0.6903 | 0.9540 | 1.0483 | 0.7236 | 21 |
| 40 | 0.6905 | 0.9545 | 1.0477 | 0.7234 | 20 |
| 41 | 0.6907 | 0.9551 | 1.0470 | 0.7232 | 19 |
| 42 | 0.6909 | 0.9556 | 1.0464 | 0.7230 | 18 |
| 43 | 0.6911 | 0.9562 | 1.0458 | 0.7228 | 17 |
| 44 | 0.6913 | 0.9567 | 1.0452 | 0.7226 | 16 |
| 45 | 0.6915 | 0.9573 | 1.0446 | 0.7224 | 15 |
| 46 | 0.6917 | 0.9578 | 1.0440 | 0.7222 | 14 |
| 47 | 0.6919 | 0.9584 | 1.0434 | 0.7220 | 13 |
| 48 | 0.6921 | 0.9590 | 1.0428 | 0.7218 | 12 |
| 49 | 0.6924 | 0.9595 | 1.0422 | 0.7216 | 11 |
| 50 | 0.6926 | 0.9601 | 1.0416 | 0.7214 | 10 |
| 51 | 0.6928 | 0.9606 | 1.0410 | 0.7212 | 9 |
| 52 | 0.6930 | 0.9612 | 1.0404 | 0.7210 | 8 |
| 53 | 0.6932 | 0.9618 | 1.0398 | 0.7208 | 7 |
| 54 | 0.6934 | 0.9623 | 1.0392 | 0.7206 | 6 |
| 55 | 0.6936 | 0.9629 | 1.0385 | 0.7203 | 5 |
| 56 | 0.6938 | 0.9634 | 1.0379 | 0.7201 | 4 |
| 57 | 0.6940 | 0.9640 | 1.0373 | 0.7199 | 3 |
| 58 | 0.6942 | 0.9646 | 1.0367 | 0.7197 | 2 |
| 59 | 0.6944 | 0.9651 | 1.0361 | 0.7195 | 1 |
| 60 | 0.6947 | 0.9657 | 1.0355 | 0.7193 | 0 |
| | Cos | Cot | Tan | Sin | |

| | Sin | Tan | Cot | Cos | |
|----|--------|--------|--------|--------|----|
| 0 | 0.6947 | 0.9657 | 1.0355 | 0.7193 | 60 |
| 1 | 0.6949 | 0.9663 | 1.0349 | 0.7191 | 59 |
| 2 | 0.6951 | 0.9668 | 1.0343 | 0.7189 | 58 |
| 3 | 0.6953 | 0.9674 | 1.0337 | 0.7187 | 57 |
| 4 | 0.6955 | 0.9679 | 1.0331 | 0.7185 | 56 |
| 5 | 0.6957 | 0.9685 | 1.0325 | 0.7183 | 55 |
| 6 | 0.6959 | 0.9691 | 1.0319 | 0.7181 | 54 |
| 7 | 0.6961 | 0.9696 | 1.0313 | 0.7179 | 53 |
| 8 | 0.6963 | 0.9702 | 1.0307 | 0.7177 | 52 |
| 9 | 0.6965 | 0.9708 | 1.0301 | 0.7175 | 51 |
| 10 | 0.6967 | 0.9713 | 1.0295 | 0.7173 | 50 |
| 11 | 0.6970 | 0.9719 | 1.0289 | 0.7171 | 49 |
| 12 | 0.6972 | 0.9725 | 1.0283 | 0.7169 | 48 |
| 13 | 0.6974 | 0.9730 | 1.0277 | 0.7167 | 47 |
| 14 | 0.6976 | 0.9736 | 1.0271 | 0.7165 | 46 |
| 15 | 0.6978 | 0.9742 | 1.0265 | 0.7163 | 45 |
| 16 | 0.6980 | 0.9747 | 1.0259 | 0.7161 | 44 |
| 17 | 0.6982 | 0.9753 | 1.0253 | 0.7159 | 43 |
| 18 | 0.6984 | 0.9759 | 1.0247 | 0.7157 | 42 |
| 19 | 0.6986 | 0.9764 | 1.0241 | 0.7155 | 41 |
| 20 | 0.6988 | 0.9770 | 1.0235 | 0.7153 | 40 |
| 21 | 0.6990 | 0.9776 | 1.0230 | 0.7151 | 39 |
| 22 | 0.6992 | 0.9781 | 1.0224 | 0.7149 | 38 |
| 23 | 0.6995 | 0.9787 | 1.0218 | 0.7147 | 37 |
| 24 | 0.6997 | 0.9793 | 1.0212 | 0.7145 | 36 |
| 25 | 0.6999 | 0.9798 | 1.0206 | 0.7143 | 35 |
| 26 | 0.7001 | 0.9804 | 1.0200 | 0.7141 | 34 |
| 27 | 0.7003 | 0.9810 | 1.0194 | 0.7139 | 33 |
| 28 | 0.7005 | 0.9816 | 1.0188 | 0.7137 | 32 |
| 29 | 0.7007 | 0.9821 | 1.0182 | 0.7135 | 31 |
| 30 | 0.7009 | 0.9827 | 1.0176 | 0.7133 | 30 |
| 31 | 0.7011 | 0.9833 | 1.0170 | 0.7130 | 29 |
| 32 | 0.7013 | 0.9838 | 1.0164 | 0.7128 | 28 |
| 33 | 0.7015 | 0.9844 | 1.0158 | 0.7126 | 27 |
| 34 | 0.7017 | 0.9850 | 1.0152 | 0.7124 | 26 |
| 35 | 0.7019 | 0.9856 | 1.0147 | 0.7122 | 25 |
| 36 | 0.7022 | 0.9861 | 1.0141 | 0.7120 | 24 |
| 37 | 0.7024 | 0.9867 | 1.0135 | 0.7118 | 23 |
| 38 | 0.7026 | 0.9873 | 1.0129 | 0.7116 | 22 |
| 39 | 0.7028 | 0.9879 | 1.0123 | 0.7114 | 21 |
| 40 | 0.7030 | 0.9884 | 1.0117 | 0.7112 | 20 |
| 41 | 0.7032 | 0.9890 | 1.0111 | 0.7110 | 19 |
| 42 | 0.7034 | 0.9896 | 1.0105 | 0.7108 | 18 |
| 43 | 0.7036 | 0.9902 | 1.0099 | 0.7106 | 17 |
| 44 | 0.7038 | 0.9907 | 1.0094 | 0.7104 | 16 |
| 45 | 0.7040 | 0.9913 | 1.0088 | 0.7102 | 15 |
| 46 | 0.7042 | 0.9919 | 1.0082 | 0.7100 | 14 |
| 47 | 0.7044 | 0.9925 | 1.0076 | 0.7098 | 13 |
| 48 | 0.7046 | 0.9930 | 1.0070 | 0.7096 | 12 |
| 49 | 0.7048 | 0.9936 | 1.0064 | 0.7094 | 11 |
| 50 | 0.7050 | 0.9942 | 1.0058 | 0.7092 | 10 |
| 51 | 0.7053 | 0.9948 | 1.0052 | 0.7090 | 9 |
| 52 | 0.7055 | 0.9954 | 1.0047 | 0.7088 | 8 |
| 53 | 0.7057 | 0.9959 | 1.0041 | 0.7085 | 7 |
| 54 | 0.7059 | 0.9965 | 1.0035 | 0.7083 | 6 |
| 55 | 0.7061 | 0.9971 | 1.0029 | 0.7081 | 5 |
| 56 | 0.7063 | 0.9977 | 1.0023 | 0.7079 | 4 |
| 57 | 0.7065 | 0.9983 | 1.0017 | 0.7077 | 3 |
| 58 | 0.7067 | 0.9988 | 1.0012 | 0.7075 | 2 |
| 59 | 0.7069 | 0.9994 | 1.0006 | 0.7073 | 1 |
| 60 | 0.7071 | 1.0000 | 1.0000 | 0.7071 | 0 |
| | Cos | Cot | Tan | Sin | |

VI

TABLE OF SQUARES, CUBES, SQUARE ROOTS AND CUBE ROOTS

OF

WHOLE NUMBERS FROM 1 TO 1020.

The numbers are given in the columns headed N , their squares, cubes, square roots and cube roots respectively in the columns headed N^2 , N^3 , \sqrt{N} and $\sqrt[3]{N}$

0—60

| N | N^2 | N^3 | \sqrt{N} | $\sqrt[3]{N}$ | N | N^2 | N^3 | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|-------|-------|------------|---------------|-----|-------|--------|------------|---------------|
| 0 | 0 | 0 | 0.0000 | 0.0000 | 30 | 900 | 27000 | 5.4772 | 3.1072 |
| 1 | 1 | 1 | 1.0000 | 1.0000 | 31 | 961 | 29791 | 5.5678 | 3.1414 |
| 2 | 4 | 8 | 1.4142 | 1.2599 | 32 | 1024 | 32768 | 5.6569 | 3.1748 |
| 3 | 9 | 27 | 1.7321 | 1.4422 | 33 | 1089 | 35937 | 5.7446 | 3.2075 |
| 4 | 16 | 64 | 2.0000 | 1.5874 | 34 | 1156 | 39304 | 5.8310 | 3.2396 |
| 5 | 25 | 125 | 2.2361 | 1.7100 | 35 | 1225 | 42875 | 5.9161 | 3.2711 |
| 6 | 36 | 216 | 2.4495 | 1.8171 | 36 | 1296 | 46656 | 6.0000 | 3.3019 |
| 7 | 49 | 343 | 2.6458 | 1.9129 | 37 | 1369 | 50653 | 6.0828 | 3.3322 |
| 8 | 64 | 512 | 2.8284 | 2.0000 | 38 | 1444 | 54872 | 6.1644 | 3.3620 |
| 9 | 81 | 729 | 3.0000 | 2.0801 | 39 | 1521 | 59319 | 6.2450 | 3.3912 |
| 10 | 100 | 1000 | 3.1623 | 2.1544 | 40 | 1600 | 64000 | 6.3246 | 3.4200 |
| 11 | 121 | 1331 | 3.3166 | 2.2240 | 41 | 1681 | 68921 | 6.4031 | 3.4482 |
| 12 | 144 | 1728 | 3.4641 | 2.2894 | 42 | 1764 | 74088 | 6.4807 | 3.4760 |
| 13 | 169 | 2197 | 3.6056 | 2.3513 | 43 | 1849 | 79507 | 6.5574 | 3.5034 |
| 14 | 196 | 2744 | 3.7417 | 2.4101 | 44 | 1936 | 85184 | 6.6332 | 3.5303 |
| 15 | 225 | 3375 | 3.8730 | 2.4662 | 45 | 2025 | 91125 | 6.7082 | 3.5569 |
| 16 | 256 | 4096 | 4.0000 | 2.5198 | 46 | 2116 | 97336 | 6.7823 | 3.5830 |
| 17 | 289 | 4913 | 4.1231 | 2.5713 | 47 | 2209 | 103823 | 6.8557 | 3.6088 |
| 18 | 324 | 5832 | 4.2426 | 2.6207 | 48 | 2304 | 110592 | 6.9282 | 3.6342 |
| 19 | 361 | 6859 | 4.3589 | 2.6684 | 49 | 2401 | 117649 | 7.0000 | 3.6593 |
| 20 | 400 | 8000 | 4.4721 | 2.7144 | 50 | 2500 | 125000 | 7.0711 | 3.6840 |
| 21 | 441 | 9261 | 4.5826 | 2.7589 | 51 | 2601 | 132651 | 7.1414 | 3.7084 |
| 22 | 484 | 10648 | 4.6904 | 2.8020 | 52 | 2704 | 140608 | 7.2111 | 3.7325 |
| 23 | 529 | 12167 | 4.7958 | 2.8439 | 53 | 2809 | 148877 | 7.2801 | 3.7563 |
| 24 | 576 | 13824 | 4.8990 | 2.8845 | 54 | 2916 | 157464 | 7.3485 | 3.7798 |
| 25 | 625 | 15625 | 5.0000 | 2.9240 | 55 | 3025 | 166375 | 7.4162 | 3.8030 |
| 26 | 676 | 17576 | 5.0990 | 2.9625 | 56 | 3136 | 175616 | 7.4833 | 3.8259 |
| 27 | 729 | 19683 | 5.1962 | 3.0000 | 57 | 3249 | 185193 | 7.5498 | 3.8485 |
| 28 | 784 | 21952 | 5.2915 | 3.0366 | 58 | 3364 | 195112 | 7.6158 | 3.8709 |
| 29 | 841 | 24389 | 5.3852 | 3.0723 | 59 | 3481 | 205379 | 7.6811 | 3.8930 |
| 30 | 900 | 27000 | 5.4772 | 3.1072 | 60 | 3600 | 216000 | 7.7460 | 3.9149 |
| N | N^2 | N^3 | \sqrt{N} | $\sqrt[3]{N}$ | N | N^2 | N^3 | \sqrt{N} | $\sqrt[3]{N}$ |

| N | N ² | N ³ | $\frac{1}{N}$ | $\frac{1}{N^2}$ | N | N ² | N ³ | $\frac{1}{N}$ | $\frac{1}{N^2}$ |
|-----|----------------|----------------|---------------|-----------------|-----|----------------|----------------|---------------|-----------------|
| 60 | 3600 | 216000 | 7.7460 | 3.9149 | 120 | 14400 | 1728000 | 10.9545 | 4.9324 |
| 61 | 3721 | 226981 | 7.8102 | 3.9365 | 121 | 14641 | 1771561 | 11.0000 | 4.9401 |
| 62 | 3844 | 235328 | 7.8740 | 3.9579 | 122 | 14884 | 1815848 | 11.0454 | 4.9597 |
| 63 | 3969 | 250047 | 7.9373 | 3.9791 | 123 | 15129 | 1860867 | 11.0905 | 4.9732 |
| 64 | 4096 | 262144 | 8.0000 | 4.0000 | 124 | 15376 | 1906624 | 11.1355 | 4.9866 |
| 65 | 4225 | 274625 | 8.0623 | 4.0207 | 125 | 15625 | 1953125 | 11.1803 | 5.0000 |
| 66 | 4356 | 287496 | 8.1240 | 4.0412 | 126 | 15876 | 2000376 | 11.2250 | 5.0133 |
| 67 | 4489 | 300763 | 8.1854 | 4.0615 | 127 | 16129 | 2048383 | 11.2694 | 5.0265 |
| 68 | 4624 | 314432 | 8.2462 | 4.0817 | 128 | 16384 | 2097152 | 11.3137 | 5.0397 |
| 69 | 4761 | 328509 | 8.3066 | 4.1016 | 129 | 16641 | 2146689 | 11.3578 | 5.0528 |
| 70 | 4900 | 343000 | 8.3666 | 4.1213 | 130 | 16900 | 2197000 | 11.4018 | 5.0658 |
| 71 | 5041 | 357911 | 8.4261 | 4.1408 | 131 | 17161 | 2248091 | 11.4455 | 5.0788 |
| 72 | 5184 | 373248 | 8.4853 | 4.1602 | 132 | 17424 | 2299968 | 11.4891 | 5.0916 |
| 73 | 5329 | 389017 | 8.5440 | 4.1793 | 133 | 17689 | 2352637 | 11.5326 | 5.1045 |
| 74 | 5476 | 405224 | 8.6023 | 4.1983 | 134 | 17956 | 2406104 | 11.5758 | 5.1172 |
| 75 | 5625 | 421875 | 8.6603 | 4.2172 | 135 | 18225 | 2460375 | 11.6190 | 5.1299 |
| 76 | 5776 | 438976 | 8.7178 | 4.2358 | 136 | 18496 | 2515456 | 11.6619 | 5.1426 |
| 77 | 5929 | 456533 | 8.7750 | 4.2543 | 137 | 18769 | 2571353 | 11.7047 | 5.1551 |
| 78 | 6084 | 474552 | 8.8318 | 4.2727 | 138 | 19044 | 2628072 | 11.7473 | 5.1676 |
| 79 | 6241 | 493039 | 8.8882 | 4.2908 | 139 | 19321 | 2685619 | 11.7898 | 5.1801 |
| 80 | 6400 | 512000 | 8.9443 | 4.3089 | 140 | 19600 | 2744000 | 11.8322 | 5.1925 |
| 81 | 6561 | 531441 | 9.0000 | 4.3267 | 141 | 19881 | 2803221 | 11.8743 | 5.2048 |
| 82 | 6724 | 551368 | 9.0554 | 4.3445 | 142 | 20164 | 2863288 | 11.9164 | 5.2171 |
| 83 | 6889 | 571787 | 9.1104 | 4.3621 | 143 | 20449 | 2924207 | 11.9583 | 5.2293 |
| 84 | 7056 | 592704 | 9.1652 | 4.3795 | 144 | 20736 | 2985984 | 12.0000 | 5.2415 |
| 85 | 7225 | 614125 | 9.2195 | 4.3968 | 145 | 21025 | 3048625 | 12.0416 | 5.2536 |
| 86 | 7396 | 636056 | 9.2736 | 4.4140 | 146 | 21316 | 3112136 | 12.0830 | 5.2656 |
| 87 | 7569 | 658503 | 9.3274 | 4.4310 | 147 | 21609 | 3176523 | 12.1244 | 5.2776 |
| 88 | 7744 | 681472 | 9.3808 | 4.4480 | 148 | 21904 | 3241792 | 12.1655 | 5.2896 |
| 89 | 7921 | 704969 | 9.4340 | 4.4647 | 149 | 22201 | 3307949 | 12.2066 | 5.3015 |
| 90 | 8100 | 729000 | 9.4868 | 4.4814 | 150 | 22500 | 3375000 | 12.2474 | 5.3133 |
| 91 | 8281 | 753571 | 9.5394 | 4.4979 | 151 | 22801 | 3442951 | 12.2882 | 5.3251 |
| 92 | 8464 | 778688 | 9.5917 | 4.5144 | 152 | 23104 | 3511808 | 12.3288 | 5.3368 |
| 93 | 8649 | 804357 | 9.6437 | 4.5307 | 153 | 23409 | 3581577 | 12.3693 | 5.3485 |
| 94 | 8836 | 830584 | 9.6954 | 4.5468 | 154 | 23716 | 3652264 | 12.4097 | 5.3601 |
| 95 | 9025 | 857375 | 9.7468 | 4.5629 | 155 | 24025 | 3723875 | 12.4499 | 5.3717 |
| 96 | 9216 | 884736 | 9.7980 | 4.5789 | 156 | 24336 | 3796416 | 12.4900 | 5.3832 |
| 97 | 9409 | 912673 | 9.8489 | 4.5947 | 157 | 24649 | 3869893 | 12.5300 | 5.3947 |
| 98 | 9604 | 941192 | 9.8995 | 4.6104 | 158 | 24964 | 3944312 | 12.5698 | 5.4061 |
| 99 | 9801 | 970299 | 9.9499 | 4.6261 | 159 | 25281 | 4019679 | 12.6095 | 5.4175 |
| 100 | 10000 | 1000000 | 10.0000 | 4.6416 | 160 | 25600 | 4096000 | 12.6491 | 5.4288 |
| 101 | 10201 | 1030301 | 10.0499 | 4.6570 | 161 | 25921 | 4173281 | 12.6886 | 5.4401 |
| 102 | 10404 | 1061208 | 10.0995 | 4.6723 | 162 | 26244 | 4251528 | 12.7279 | 5.4514 |
| 103 | 10609 | 1092727 | 10.1489 | 4.6875 | 163 | 26569 | 4330747 | 12.7671 | 5.4626 |
| 104 | 10816 | 1124864 | 10.1980 | 4.7027 | 164 | 26896 | 4410944 | 12.8062 | 5.4737 |
| 105 | 11025 | 1157625 | 10.2470 | 4.7177 | 165 | 27225 | 4492125 | 12.8452 | 5.4848 |
| 106 | 11236 | 1191016 | 10.2956 | 4.7326 | 166 | 27556 | 4574296 | 12.8841 | 5.4959 |
| 107 | 11449 | 1225043 | 10.3441 | 4.7475 | 167 | 27889 | 4657403 | 12.9228 | 5.5069 |
| 108 | 11664 | 1259712 | 10.3923 | 4.7622 | 168 | 28224 | 4741032 | 12.9615 | 5.5178 |
| 109 | 11881 | 1295029 | 10.4403 | 4.7769 | 169 | 28561 | 4825089 | 13.0000 | 5.5288 |
| 110 | 12100 | 1331000 | 10.4881 | 4.7914 | 170 | 28900 | 4910300 | 13.0384 | 5.5397 |
| 111 | 12321 | 1367631 | 10.5357 | 4.8059 | 171 | 29241 | 5000211 | 13.0767 | 5.5505 |
| 112 | 12544 | 1404928 | 10.5830 | 4.8203 | 172 | 29584 | 5088448 | 13.1149 | 5.5613 |
| 113 | 12769 | 1442897 | 10.6301 | 4.8346 | 173 | 29929 | 5177717 | 13.1529 | 5.5721 |
| 114 | 12996 | 1481544 | 10.6771 | 4.8488 | 174 | 30276 | 5268024 | 13.1909 | 5.5828 |
| 115 | 13225 | 1520875 | 10.7238 | 4.8629 | 175 | 30625 | 5359375 | 13.2288 | 5.5934 |
| 116 | 13456 | 1560896 | 10.7703 | 4.8770 | 176 | 30976 | 5451776 | 13.2665 | 5.6041 |
| 117 | 13689 | 1601613 | 10.8167 | 4.8910 | 177 | 31329 | 5545233 | 13.3041 | 5.6147 |
| 118 | 13924 | 1643032 | 10.8628 | 4.9049 | 178 | 31684 | 5639752 | 13.3417 | 5.6252 |
| 119 | 14161 | 1685159 | 10.9087 | 4.9187 | 179 | 32041 | 5735339 | 13.3791 | 5.6357 |
| 120 | 14400 | 1728000 | 10.9545 | 4.9324 | 180 | 32400 | 5832000 | 13.4164 | 5.6462 |
| N | N ² | N ³ | $\frac{1}{N}$ | $\frac{1}{N^2}$ | N | N ² | N ³ | $\frac{1}{N}$ | $\frac{1}{N^2}$ |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|-----|----------------|----------------|------------|---------------|
| 180 | 32400 | 5832000 | 13.4164 | 5.6462 | 240 | 57600 | 13824000 | 15.4919 | 6.2145 |
| 181 | 32761 | 5929741 | 13.4536 | 5.6567 | 241 | 58081 | 13997521 | 15.5242 | 6.2231 |
| 182 | 33124 | 6028568 | 13.4907 | 5.6671 | 242 | 58564 | 14172488 | 15.5563 | 6.2317 |
| 183 | 33489 | 6128487 | 13.5277 | 5.6774 | 243 | 59049 | 14348907 | 15.5885 | 6.2403 |
| 184 | 33856 | 6229504 | 13.5647 | 5.6877 | 244 | 59536 | 14526784 | 15.6205 | 6.2488 |
| 185 | 34225 | 6331625 | 13.6015 | 5.6980 | 245 | 60025 | 14706125 | 15.6525 | 6.2573 |
| 186 | 34596 | 6434856 | 13.6382 | 5.7083 | 246 | 60516 | 14886936 | 15.6844 | 6.2658 |
| 187 | 34969 | 6539203 | 13.6748 | 5.7185 | 247 | 61009 | 15069223 | 15.7162 | 6.2743 |
| 188 | 35344 | 6644672 | 13.7113 | 5.7287 | 248 | 61504 | 15252992 | 15.7480 | 6.2828 |
| 189 | 35721 | 6751269 | 13.7477 | 5.7388 | 249 | 62001 | 15438249 | 15.7797 | 6.2912 |
| 190 | 36100 | 6859000 | 13.7840 | 5.7489 | 250 | 62500 | 15625000 | 15.8114 | 6.2996 |
| 191 | 36481 | 6967871 | 13.8203 | 5.7590 | 251 | 63001 | 15813251 | 15.8430 | 6.3080 |
| 192 | 36864 | 7077888 | 13.8564 | 5.7690 | 252 | 63504 | 16003008 | 15.8745 | 6.3164 |
| 193 | 37249 | 7189057 | 13.8924 | 5.7790 | 253 | 64009 | 16194277 | 15.9060 | 6.3247 |
| 194 | 37636 | 7301384 | 13.9284 | 5.7890 | 254 | 64516 | 16387064 | 15.9374 | 6.3330 |
| 195 | 38025 | 7414875 | 13.9642 | 5.7989 | 255 | 65025 | 16581375 | 15.9687 | 6.3413 |
| 196 | 38416 | 7529536 | 14.0000 | 5.8088 | 256 | 65536 | 16777216 | 16.0000 | 6.3496 |
| 197 | 38809 | 7645373 | 14.0357 | 5.8186 | 257 | 66049 | 16974593 | 16.0312 | 6.3579 |
| 198 | 39204 | 7762392 | 14.0712 | 5.8285 | 258 | 66564 | 17173512 | 16.0624 | 6.3661 |
| 199 | 39601 | 7880599 | 14.1067 | 5.8383 | 259 | 67081 | 17373979 | 16.0935 | 6.3743 |
| 200 | 40000 | 8000000 | 14.1421 | 5.8480 | 260 | 67600 | 17576000 | 16.1245 | 6.3825 |
| 201 | 40401 | 8120601 | 14.1774 | 5.8578 | 261 | 68121 | 17779581 | 16.1555 | 6.3907 |
| 202 | 40804 | 8242408 | 14.2127 | 5.8675 | 262 | 68644 | 17984728 | 16.1864 | 6.3988 |
| 203 | 41209 | 8365427 | 14.2478 | 5.8771 | 263 | 69169 | 18191447 | 16.2173 | 6.4070 |
| 204 | 41616 | 8489664 | 14.2829 | 5.8868 | 264 | 69696 | 18399744 | 16.2481 | 6.4151 |
| 205 | 42025 | 8615125 | 14.3178 | 5.8964 | 265 | 70225 | 18609625 | 16.2788 | 6.4232 |
| 206 | 42436 | 8741816 | 14.3527 | 5.9059 | 266 | 70756 | 18821096 | 16.3095 | 6.4312 |
| 207 | 42849 | 8869743 | 14.3875 | 5.9155 | 267 | 71289 | 19034163 | 16.3401 | 6.4393 |
| 208 | 43264 | 8998912 | 14.4222 | 5.9250 | 268 | 71824 | 19248832 | 16.3707 | 6.4473 |
| 209 | 43681 | 9129329 | 14.4568 | 5.9345 | 269 | 72361 | 19465109 | 16.4012 | 6.4553 |
| 210 | 44100 | 9261000 | 14.4914 | 5.9439 | 270 | 72900 | 19683000 | 16.4317 | 6.4633 |
| 211 | 44521 | 9393931 | 14.5258 | 5.9533 | 271 | 73441 | 19902511 | 16.4621 | 6.4713 |
| 212 | 44944 | 9528128 | 14.5602 | 5.9627 | 272 | 73984 | 20123648 | 16.4924 | 6.4792 |
| 213 | 45369 | 9663597 | 14.5945 | 5.9721 | 273 | 74529 | 20346417 | 16.5227 | 6.4872 |
| 214 | 45796 | 9800344 | 14.6287 | 5.9814 | 274 | 75076 | 20570824 | 16.5529 | 6.4951 |
| 215 | 46225 | 9938375 | 14.6629 | 5.9907 | 275 | 75625 | 20796875 | 16.5831 | 6.5030 |
| 216 | 46656 | 10077696 | 14.6969 | 6.0000 | 276 | 76176 | 21024576 | 16.6132 | 6.5108 |
| 217 | 47089 | 10218313 | 14.7309 | 6.0092 | 277 | 76729 | 21253933 | 16.6433 | 6.5187 |
| 218 | 47524 | 10360232 | 14.7648 | 6.0185 | 278 | 77284 | 21484952 | 16.6733 | 6.5265 |
| 219 | 47961 | 10503459 | 14.7986 | 6.0277 | 279 | 77841 | 21717639 | 16.7033 | 6.5343 |
| 220 | 48400 | 10648000 | 14.8324 | 6.0368 | 280 | 78400 | 21952000 | 16.7332 | 6.5421 |
| 221 | 48841 | 10793861 | 14.8661 | 6.0459 | 281 | 78961 | 22188041 | 16.7631 | 6.5499 |
| 222 | 49284 | 10941048 | 14.8997 | 6.0550 | 282 | 79524 | 22425768 | 16.7929 | 6.5577 |
| 223 | 49729 | 11089567 | 14.9332 | 6.0641 | 283 | 80089 | 22665187 | 16.8226 | 6.5654 |
| 224 | 50176 | 11239424 | 14.9666 | 6.0732 | 284 | 80656 | 22906304 | 16.8523 | 6.5731 |
| 225 | 50625 | 11390625 | 15.0000 | 6.0822 | 285 | 81225 | 23149125 | 16.8819 | 6.5808 |
| 226 | 51076 | 11543176 | 15.0333 | 6.0912 | 286 | 81796 | 23393656 | 16.9115 | 6.5885 |
| 227 | 51529 | 11697083 | 15.0665 | 6.1002 | 287 | 82369 | 23639903 | 16.9411 | 6.5962 |
| 228 | 51984 | 11852352 | 15.0997 | 6.1091 | 288 | 82944 | 23887872 | 16.9705 | 6.6039 |
| 229 | 52441 | 12008989 | 15.1327 | 6.1180 | 289 | 83521 | 24137569 | 17.0000 | 6.6115 |
| 230 | 52900 | 12167000 | 15.1658 | 6.1269 | 290 | 84100 | 24389000 | 17.0294 | 6.6191 |
| 231 | 53361 | 12326391 | 15.1987 | 6.1358 | 291 | 84681 | 24642171 | 17.0587 | 6.6267 |
| 232 | 53824 | 12487168 | 15.2315 | 6.1446 | 292 | 85264 | 24897088 | 17.0880 | 6.6343 |
| 233 | 54289 | 12649337 | 15.2643 | 6.1534 | 293 | 85849 | 25153757 | 17.1172 | 6.6419 |
| 234 | 54756 | 12812904 | 15.2971 | 6.1622 | 294 | 86436 | 25412184 | 17.1464 | 6.6494 |
| 235 | 55225 | 12977875 | 15.3297 | 6.1710 | 295 | 87025 | 25672375 | 17.1756 | 6.6569 |
| 236 | 55696 | 13144256 | 15.3623 | 6.1797 | 296 | 87616 | 25934336 | 17.2047 | 6.6644 |
| 237 | 56169 | 13312053 | 15.3948 | 6.1885 | 297 | 88209 | 26198073 | 17.2337 | 6.6719 |
| 238 | 56644 | 13481272 | 15.4272 | 6.1972 | 298 | 88804 | 26463592 | 17.2627 | 6.6794 |
| 239 | 57121 | 13651919 | 15.4596 | 6.2058 | 299 | 89401 | 26730899 | 17.2916 | 6.6869 |
| 240 | 57600 | 13824000 | 15.4919 | 6.2145 | 300 | 90000 | 27000000 | 17.3205 | 6.6943 |
| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |

| N | N ² | N ³ | 1/N | 1/N | N | N ² | N ³ | 1/N | 1/N |
|-----|----------------|----------------|---------|--------|-----|----------------|----------------|---------|--------|
| 300 | 90000 | 27000000 | 17.3205 | 6.6943 | 360 | 129600 | 46656000 | 18.9737 | 7.1138 |
| 301 | 90601 | 27270901 | 17.3494 | 6.7018 | 361 | 130321 | 47045881 | 19.0000 | 7.1204 |
| 302 | 91204 | 27543608 | 17.3781 | 6.7092 | 362 | 131044 | 47437928 | 19.0263 | 7.1269 |
| 303 | 91809 | 27818127 | 17.4069 | 6.7166 | 363 | 131769 | 47832147 | 19.0526 | 7.1335 |
| 304 | 92416 | 28094464 | 17.4356 | 6.7240 | 364 | 132496 | 48228544 | 19.0788 | 7.1400 |
| 305 | 93025 | 28372625 | 17.4642 | 6.7313 | 365 | 133225 | 48627125 | 19.1050 | 7.1466 |
| 306 | 93636 | 28652616 | 17.4929 | 6.7387 | 366 | 133956 | 49027896 | 19.1311 | 7.1531 |
| 307 | 94249 | 28934443 | 17.5214 | 6.7460 | 367 | 134689 | 49430863 | 19.1572 | 7.1596 |
| 308 | 94864 | 29218112 | 17.5499 | 6.7533 | 368 | 135424 | 49836032 | 19.1833 | 7.1661 |
| 309 | 95481 | 29503629 | 17.5784 | 6.7606 | 369 | 136161 | 50243409 | 19.2094 | 7.1726 |
| 310 | 96100 | 29791000 | 17.6068 | 6.7679 | 370 | 136900 | 50653000 | 19.2354 | 7.1791 |
| 311 | 96721 | 30080231 | 17.6352 | 6.7752 | 371 | 137641 | 51064811 | 19.2614 | 7.1855 |
| 312 | 97344 | 30371328 | 17.6635 | 6.7824 | 372 | 138384 | 51478848 | 19.2873 | 7.1920 |
| 313 | 97969 | 30664297 | 17.6918 | 6.7897 | 373 | 139129 | 51895117 | 19.3132 | 7.1984 |
| 314 | 98596 | 30959144 | 17.7200 | 6.7969 | 374 | 139876 | 52313624 | 19.3391 | 7.2048 |
| 315 | 99225 | 31255575 | 17.7482 | 6.8041 | 375 | 140625 | 52734375 | 19.3649 | 7.2112 |
| 316 | 99856 | 31554496 | 17.7764 | 6.8113 | 376 | 141376 | 53157376 | 19.3907 | 7.2177 |
| 317 | 100489 | 31855013 | 17.8045 | 6.8185 | 377 | 142129 | 53582633 | 19.4165 | 7.2240 |
| 318 | 101124 | 32157432 | 17.8326 | 6.8256 | 378 | 142884 | 54010152 | 19.4422 | 7.2304 |
| 319 | 101761 | 32461759 | 17.8606 | 6.8328 | 379 | 143641 | 54439939 | 19.4679 | 7.2368 |
| 320 | 102400 | 32768000 | 17.8885 | 6.8399 | 380 | 144400 | 54872000 | 19.4936 | 7.2432 |
| 321 | 103041 | 33076161 | 17.9165 | 6.8470 | 381 | 145161 | 55306341 | 19.5192 | 7.2495 |
| 322 | 103684 | 33386248 | 17.9444 | 6.8541 | 382 | 145924 | 55742968 | 19.5448 | 7.2558 |
| 323 | 104329 | 33698267 | 17.9722 | 6.8612 | 383 | 146689 | 56181887 | 19.5704 | 7.2622 |
| 324 | 104976 | 34012224 | 18.0000 | 6.8683 | 384 | 147456 | 56623104 | 19.5959 | 7.2685 |
| 325 | 105625 | 34328125 | 18.0278 | 6.8753 | 385 | 148225 | 57066625 | 19.6214 | 7.2748 |
| 326 | 106276 | 34645976 | 18.0555 | 6.8824 | 386 | 148996 | 57512456 | 19.6469 | 7.2811 |
| 327 | 106929 | 34965783 | 18.0831 | 6.8894 | 387 | 149769 | 57960603 | 19.6723 | 7.2874 |
| 328 | 107584 | 35287552 | 18.1108 | 6.8964 | 388 | 150544 | 58411072 | 19.6977 | 7.2936 |
| 329 | 108241 | 35611289 | 18.1384 | 6.9034 | 389 | 151321 | 58863869 | 19.7231 | 7.2999 |
| 330 | 108900 | 35937000 | 18.1659 | 6.9104 | 390 | 152100 | 59319000 | 19.7484 | 7.3061 |
| 331 | 109561 | 36264691 | 18.1934 | 6.9174 | 391 | 152881 | 59776471 | 19.7737 | 7.3124 |
| 332 | 110224 | 36594368 | 18.2209 | 6.9244 | 392 | 153664 | 60236288 | 19.7990 | 7.3186 |
| 333 | 110889 | 36926037 | 18.2483 | 6.9313 | 393 | 154449 | 60698457 | 19.8242 | 7.3248 |
| 334 | 111556 | 37259704 | 18.2757 | 6.9382 | 394 | 155236 | 61162984 | 19.8494 | 7.3310 |
| 335 | 112225 | 37595375 | 18.3030 | 6.9451 | 395 | 156025 | 61629875 | 19.8746 | 7.3372 |
| 336 | 112896 | 37933056 | 18.3303 | 6.9521 | 396 | 156816 | 62099136 | 19.8997 | 7.3434 |
| 337 | 113569 | 38272753 | 18.3576 | 6.9589 | 397 | 157609 | 62570773 | 19.9249 | 7.3496 |
| 338 | 114244 | 38614472 | 18.3848 | 6.9658 | 398 | 158404 | 63044792 | 19.9499 | 7.3558 |
| 339 | 114921 | 38958219 | 18.4120 | 6.9727 | 399 | 159201 | 63521199 | 19.9750 | 7.3619 |
| 340 | 115600 | 39304000 | 18.4391 | 6.9795 | 400 | 160000 | 64000000 | 20.0000 | 7.3681 |
| 341 | 116281 | 39651821 | 18.4662 | 6.9864 | 401 | 160801 | 64481201 | 20.0250 | 7.3742 |
| 342 | 116964 | 40001688 | 18.4932 | 6.9932 | 402 | 161604 | 64964808 | 20.0499 | 7.3803 |
| 343 | 117649 | 40353607 | 18.5203 | 7.0000 | 403 | 162409 | 65450827 | 20.0749 | 7.3864 |
| 344 | 118336 | 40707584 | 18.5472 | 7.0068 | 404 | 163216 | 65939264 | 20.0998 | 7.3925 |
| 345 | 119025 | 41063625 | 18.5742 | 7.0136 | 405 | 164025 | 66430125 | 20.1246 | 7.3986 |
| 346 | 119716 | 41421736 | 18.6011 | 7.0203 | 406 | 164836 | 66923416 | 20.1494 | 7.4047 |
| 347 | 120409 | 41781923 | 18.6279 | 7.0271 | 407 | 165649 | 67419143 | 20.1742 | 7.4108 |
| 348 | 121104 | 42144192 | 18.6548 | 7.0338 | 408 | 166464 | 67917312 | 20.1990 | 7.4169 |
| 349 | 121801 | 42508549 | 18.6815 | 7.0406 | 409 | 167281 | 68417929 | 20.2237 | 7.4229 |
| 350 | 122500 | 42875000 | 18.7083 | 7.0473 | 410 | 168100 | 68921000 | 20.2485 | 7.4290 |
| 351 | 123201 | 43243551 | 18.7350 | 7.0540 | 411 | 168921 | 69426531 | 20.2731 | 7.4350 |
| 352 | 123904 | 43614208 | 18.7617 | 7.0607 | 412 | 169744 | 69934528 | 20.2978 | 7.4410 |
| 353 | 124609 | 43986977 | 18.7883 | 7.0674 | 413 | 170569 | 70444997 | 20.3224 | 7.4470 |
| 354 | 125316 | 44361864 | 18.8149 | 7.0740 | 414 | 171396 | 70957944 | 20.3470 | 7.4530 |
| 355 | 126025 | 44738875 | 18.8414 | 7.0807 | 415 | 172225 | 71473375 | 20.3715 | 7.4590 |
| 356 | 126736 | 45118016 | 18.8680 | 7.0873 | 416 | 173056 | 71991296 | 20.3961 | 7.4650 |
| 357 | 127449 | 45499293 | 18.8944 | 7.0940 | 417 | 173889 | 72511713 | 20.4206 | 7.4710 |
| 358 | 128164 | 45882712 | 18.9209 | 7.1006 | 418 | 174724 | 73034632 | 20.4450 | 7.4770 |
| 359 | 128881 | 46268279 | 18.9473 | 7.1072 | 419 | 175561 | 73560059 | 20.4695 | 7.4829 |
| 360 | 129600 | 46656000 | 18.9737 | 7.1138 | 420 | 176400 | 74088000 | 20.4939 | 7.4889 |
| N | N ² | N ³ | 1/N | 1/N | N | N ² | N ³ | 1/N | 1/N |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|-----|----------------|----------------|------------|---------------|
| 420 | 176400 | 74088000 | 20.4939 | 7.4889 | 480 | 230400 | 110592000 | 21.9089 | 7.8297 |
| 421 | 177241 | 74618461 | 20.5183 | 7.4948 | 481 | 231361 | 111284641 | 21.9317 | 7.8352 |
| 422 | 178084 | 75151448 | 20.5426 | 7.5007 | 482 | 232324 | 111980168 | 21.9545 | 7.8406 |
| 423 | 178929 | 75686967 | 20.5670 | 7.5067 | 483 | 233289 | 112678587 | 21.9773 | 7.8460 |
| 424 | 179776 | 76225024 | 20.5913 | 7.5126 | 484 | 234256 | 113379904 | 22.0000 | 7.8514 |
| 425 | 180625 | 76765625 | 20.6155 | 7.5185 | 485 | 235225 | 114084125 | 22.0227 | 7.8568 |
| 426 | 181476 | 77308776 | 20.6398 | 7.5244 | 486 | 236196 | 114791256 | 22.0454 | 7.8622 |
| 427 | 182329 | 77854483 | 20.6640 | 7.5302 | 487 | 237169 | 115501303 | 22.0681 | 7.8676 |
| 428 | 183184 | 78402752 | 20.6882 | 7.5361 | 488 | 238144 | 116214272 | 22.0907 | 7.8730 |
| 429 | 184041 | 78953589 | 20.7123 | 7.5420 | 489 | 239121 | 116930169 | 22.1133 | 7.8784 |
| 430 | 184900 | 79507000 | 20.7364 | 7.5478 | 490 | 240100 | 117649000 | 22.1359 | 7.8837 |
| 431 | 185761 | 80062991 | 20.7605 | 7.5537 | 491 | 241081 | 118370771 | 22.1585 | 7.8891 |
| 432 | 186624 | 80621568 | 20.7846 | 7.5595 | 492 | 242064 | 119095488 | 22.1811 | 7.8944 |
| 433 | 187489 | 81182737 | 20.8087 | 7.5654 | 493 | 243049 | 119823157 | 22.2036 | 7.8998 |
| 434 | 188356 | 81746054 | 20.8327 | 7.5712 | 494 | 244036 | 120553784 | 22.2261 | 7.9051 |
| 435 | 189225 | 82312875 | 20.8567 | 7.5770 | 495 | 245025 | 121287375 | 22.2486 | 7.9105 |
| 436 | 190096 | 82881856 | 20.8806 | 7.5828 | 496 | 246016 | 122023936 | 22.2711 | 7.9158 |
| 437 | 190969 | 83453453 | 20.9045 | 7.5886 | 497 | 247009 | 122763473 | 22.2935 | 7.9211 |
| 438 | 191844 | 84027672 | 20.9284 | 7.5944 | 498 | 248004 | 123505992 | 22.3159 | 7.9264 |
| 439 | 192721 | 84604519 | 20.9523 | 7.6001 | 499 | 249001 | 124251499 | 22.3383 | 7.9317 |
| 440 | 193600 | 85184000 | 20.9762 | 7.6059 | 500 | 250000 | 125000000 | 22.3607 | 7.9370 |
| 441 | 194481 | 85766121 | 21.0000 | 7.6117 | 501 | 251001 | 125751501 | 22.3830 | 7.9423 |
| 442 | 195364 | 86350888 | 21.0238 | 7.6174 | 502 | 252004 | 126506008 | 22.4054 | 7.9476 |
| 443 | 196249 | 86938307 | 21.0476 | 7.6232 | 503 | 253009 | 127263527 | 22.4277 | 7.9528 |
| 444 | 197136 | 87528384 | 21.0713 | 7.6289 | 504 | 254016 | 128024064 | 22.4499 | 7.9581 |
| 445 | 198025 | 88121125 | 21.0950 | 7.6346 | 505 | 255025 | 128787625 | 22.4722 | 7.9634 |
| 446 | 198916 | 88716536 | 21.1187 | 7.6403 | 506 | 256036 | 129554216 | 22.4944 | 7.9686 |
| 447 | 199809 | 89314623 | 21.1424 | 7.6460 | 507 | 257049 | 130323843 | 22.5167 | 7.9739 |
| 448 | 200704 | 89915392 | 21.1660 | 7.6517 | 508 | 258064 | 131096512 | 22.5389 | 7.9791 |
| 449 | 201601 | 90518849 | 21.1896 | 7.6574 | 509 | 259081 | 131872229 | 22.5610 | 7.9843 |
| 450 | 202500 | 91125000 | 21.2132 | 7.6631 | 510 | 260100 | 132651000 | 22.5832 | 7.9896 |
| 451 | 203401 | 91733851 | 21.2368 | 7.6688 | 511 | 261121 | 133432831 | 22.6053 | 7.9948 |
| 452 | 204304 | 92345408 | 21.2603 | 7.6744 | 512 | 262144 | 134217728 | 22.6275 | 8.0000 |
| 453 | 205209 | 92959677 | 21.2838 | 7.6801 | 513 | 263169 | 135005697 | 22.6495 | 8.0052 |
| 454 | 206116 | 93576664 | 21.3073 | 7.6857 | 514 | 264196 | 135796744 | 22.6716 | 8.0104 |
| 455 | 207025 | 94196375 | 21.3307 | 7.6914 | 515 | 265225 | 136590875 | 22.6936 | 8.0156 |
| 456 | 207936 | 94818816 | 21.3542 | 7.6970 | 516 | 266256 | 137388006 | 22.7156 | 8.0208 |
| 457 | 208849 | 95443993 | 21.3776 | 7.7026 | 517 | 267289 | 138188413 | 22.7376 | 8.0260 |
| 458 | 209764 | 96071912 | 21.4009 | 7.7082 | 518 | 268324 | 138991832 | 22.7596 | 8.0311 |
| 459 | 210681 | 96702579 | 21.4243 | 7.7138 | 519 | 269361 | 139798359 | 22.7816 | 8.0363 |
| 460 | 211600 | 97336000 | 21.4476 | 7.7194 | 520 | 270400 | 140608000 | 22.8035 | 8.0415 |
| 461 | 212521 | 97972181 | 21.4709 | 7.7250 | 521 | 271441 | 141420761 | 22.8254 | 8.0466 |
| 462 | 213444 | 98611128 | 21.4942 | 7.7306 | 522 | 272484 | 142236648 | 22.8473 | 8.0517 |
| 463 | 214369 | 99252847 | 21.5174 | 7.7362 | 523 | 273529 | 143055667 | 22.8692 | 8.0569 |
| 464 | 215296 | 99897344 | 21.5407 | 7.7418 | 524 | 274576 | 143877824 | 22.8910 | 8.0620 |
| 465 | 216225 | 100544625 | 21.5639 | 7.7473 | 525 | 275625 | 144703125 | 22.9129 | 8.0671 |
| 466 | 217156 | 101194696 | 21.5870 | 7.7529 | 526 | 276676 | 145531576 | 22.9347 | 8.0723 |
| 467 | 218089 | 101847563 | 21.6102 | 7.7584 | 527 | 277729 | 146363183 | 22.9565 | 8.0774 |
| 468 | 219024 | 102503232 | 21.6333 | 7.7639 | 528 | 278784 | 147197952 | 22.9783 | 8.0825 |
| 469 | 219961 | 103161709 | 21.6564 | 7.7695 | 529 | 279841 | 148035889 | 23.0000 | 8.0876 |
| 470 | 220900 | 103823000 | 21.6795 | 7.7750 | 530 | 280900 | 148877000 | 23.0217 | 8.0927 |
| 471 | 221841 | 104487111 | 21.7025 | 7.7805 | 531 | 281961 | 149721291 | 23.0434 | 8.0978 |
| 472 | 222784 | 105154048 | 21.7256 | 7.7860 | 532 | 283024 | 150568768 | 23.0651 | 8.1028 |
| 473 | 223729 | 105823817 | 21.7486 | 7.7915 | 533 | 284089 | 151419437 | 23.0868 | 8.1079 |
| 474 | 224676 | 106496424 | 21.7715 | 7.7970 | 534 | 285156 | 152273304 | 23.1084 | 8.1130 |
| 475 | 225625 | 107171875 | 21.7945 | 7.8025 | 535 | 286225 | 153130375 | 23.1301 | 8.1180 |
| 476 | 226576 | 107850176 | 21.8174 | 7.8079 | 536 | 287296 | 153990656 | 23.1517 | 8.1231 |
| 477 | 227529 | 108531333 | 21.8403 | 7.8134 | 537 | 288369 | 154854153 | 23.1733 | 8.1281 |
| 478 | 228484 | 109215352 | 21.8632 | 7.8188 | 538 | 289444 | 155720872 | 23.1948 | 8.1332 |
| 479 | 229441 | 109902239 | 21.8861 | 7.8243 | 539 | 290521 | 156590819 | 23.2164 | 8.1382 |
| 480 | 230400 | 110592000 | 21.9089 | 7.8297 | 540 | 291600 | 157464000 | 23.2379 | 8.1433 |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|-----|----------------|----------------|------------|---------------|
| 540 | 291600 | 157464000 | 23.2379 | 8.1433 | 600 | 360000 | 216000000 | 24.4949 | 8.4343 |
| 541 | 292681 | 158330421 | 23.2594 | 8.1483 | 601 | 361201 | 217081801 | 24.5153 | 8.4390 |
| 542 | 293764 | 159220688 | 23.2809 | 8.1533 | 602 | 362404 | 218167208 | 24.5357 | 8.4437 |
| 543 | 294849 | 160130307 | 23.3024 | 8.1583 | 603 | 363609 | 219256227 | 24.5561 | 8.4484 |
| 544 | 295936 | 160989184 | 23.3238 | 8.1633 | 604 | 364816 | 220348864 | 24.5764 | 8.4530 |
| 545 | 297025 | 161878625 | 23.3452 | 8.1683 | 605 | 366025 | 221445125 | 24.5967 | 8.4577 |
| 546 | 298116 | 162777136 | 23.3666 | 8.1733 | 606 | 367236 | 222545016 | 24.6171 | 8.4623 |
| 547 | 299209 | 163667323 | 23.3880 | 8.1783 | 607 | 368449 | 223648543 | 24.6374 | 8.4670 |
| 548 | 300304 | 164566592 | 23.4094 | 8.1833 | 608 | 369664 | 224755712 | 24.6577 | 8.4716 |
| 549 | 301401 | 165469149 | 23.4307 | 8.1882 | 609 | 370881 | 225866529 | 24.6779 | 8.4763 |
| 550 | 302500 | 166375000 | 23.4521 | 8.1932 | 610 | 372100 | 226981000 | 24.6982 | 8.4809 |
| 551 | 303601 | 167284151 | 23.4734 | 8.1982 | 611 | 373321 | 228099131 | 24.7184 | 8.4856 |
| 552 | 304704 | 168196608 | 23.4947 | 8.2031 | 612 | 374544 | 229220928 | 24.7386 | 8.4902 |
| 553 | 305809 | 169112377 | 23.5160 | 8.2081 | 613 | 375769 | 230346397 | 24.7588 | 8.4948 |
| 554 | 306916 | 170031464 | 23.5372 | 8.2130 | 614 | 376996 | 231475544 | 24.7790 | 8.4994 |
| 555 | 308025 | 170953875 | 23.5584 | 8.2180 | 615 | 378225 | 232608375 | 24.7992 | 8.5040 |
| 556 | 309136 | 171879616 | 23.5797 | 8.2229 | 616 | 379456 | 233744896 | 24.8193 | 8.5086 |
| 557 | 310249 | 172808603 | 23.6008 | 8.2278 | 617 | 380689 | 234885113 | 24.8395 | 8.5132 |
| 558 | 311364 | 173741112 | 23.6220 | 8.2327 | 618 | 381924 | 236029932 | 24.8596 | 8.5178 |
| 559 | 312481 | 174676879 | 23.6432 | 8.2377 | 619 | 383161 | 237176659 | 24.8797 | 8.5224 |
| 560 | 313600 | 175616000 | 23.6643 | 8.2426 | 620 | 384400 | 238328000 | 24.8998 | 8.5270 |
| 561 | 314721 | 176558481 | 23.6854 | 8.2475 | 621 | 385641 | 239483061 | 24.9199 | 8.5316 |
| 562 | 315844 | 177504328 | 23.7065 | 8.2524 | 622 | 386884 | 240641848 | 24.9399 | 8.5362 |
| 563 | 316969 | 178453547 | 23.7276 | 8.2573 | 623 | 388129 | 241804367 | 24.9600 | 8.5408 |
| 564 | 318096 | 179406144 | 23.7487 | 8.2621 | 624 | 389376 | 242970624 | 24.9800 | 8.5453 |
| 565 | 319225 | 180362125 | 23.7697 | 8.2670 | 625 | 390625 | 244140625 | 25.0000 | 8.5499 |
| 566 | 320356 | 181321496 | 23.7908 | 8.2719 | 626 | 391876 | 245314376 | 25.0200 | 8.5544 |
| 567 | 321489 | 182284263 | 23.8118 | 8.2768 | 627 | 393129 | 246491883 | 25.0400 | 8.5590 |
| 568 | 322624 | 183250432 | 23.8328 | 8.2816 | 628 | 394384 | 247673152 | 25.0599 | 8.5635 |
| 569 | 323761 | 184220009 | 23.8537 | 8.2865 | 629 | 395641 | 248858189 | 25.0799 | 8.5681 |
| 570 | 324900 | 185193000 | 23.8747 | 8.2913 | 630 | 396900 | 250047000 | 25.0998 | 8.5726 |
| 571 | 326041 | 186169411 | 23.8956 | 8.2962 | 631 | 398161 | 251239591 | 25.1197 | 8.5772 |
| 572 | 327184 | 187149248 | 23.9165 | 8.3010 | 632 | 399424 | 252435968 | 25.1396 | 8.5817 |
| 573 | 328329 | 188132517 | 23.9374 | 8.3059 | 633 | 400689 | 253636137 | 25.1595 | 8.5862 |
| 574 | 329476 | 189119224 | 23.9583 | 8.3107 | 634 | 401956 | 254840104 | 25.1794 | 8.5907 |
| 575 | 330625 | 190109375 | 23.9792 | 8.3155 | 635 | 403225 | 256047875 | 25.1992 | 8.5952 |
| 576 | 331776 | 191102976 | 24.0000 | 8.3203 | 636 | 404496 | 257259456 | 25.2190 | 8.5997 |
| 577 | 332929 | 192100033 | 24.0208 | 8.3251 | 637 | 405769 | 258474853 | 25.2389 | 8.6043 |
| 578 | 334084 | 193100532 | 24.0416 | 8.3300 | 638 | 407044 | 259694072 | 25.2587 | 8.6088 |
| 579 | 335241 | 194104539 | 24.0624 | 8.3348 | 639 | 408321 | 260917119 | 25.2784 | 8.6132 |
| 580 | 336400 | 195112000 | 24.0832 | 8.3396 | 640 | 409600 | 262144000 | 25.2982 | 8.6177 |
| 581 | 337561 | 196122941 | 24.1039 | 8.3443 | 641 | 410881 | 263374721 | 25.3180 | 8.6222 |
| 582 | 338724 | 197137368 | 24.1247 | 8.3491 | 642 | 412164 | 264609288 | 25.3377 | 8.6267 |
| 583 | 339889 | 198155287 | 24.1454 | 8.3539 | 643 | 413449 | 265847707 | 25.3574 | 8.6312 |
| 584 | 341056 | 199176704 | 24.1661 | 8.3587 | 644 | 414736 | 267089984 | 25.3772 | 8.6357 |
| 585 | 342225 | 200201625 | 24.1868 | 8.3634 | 645 | 416025 | 268336125 | 25.3969 | 8.6401 |
| 586 | 343396 | 201230056 | 24.2074 | 8.3682 | 646 | 417316 | 269586136 | 25.4165 | 8.6446 |
| 587 | 344569 | 202262003 | 24.2281 | 8.3730 | 647 | 418609 | 270840023 | 25.4362 | 8.6490 |
| 588 | 345744 | 203297472 | 24.2487 | 8.3777 | 648 | 419904 | 272097792 | 25.4558 | 8.6535 |
| 589 | 346921 | 204336469 | 24.2693 | 8.3825 | 649 | 421201 | 273359449 | 25.4755 | 8.6579 |
| 590 | 348100 | 205379000 | 24.2899 | 8.3872 | 650 | 422500 | 274625000 | 25.4951 | 8.6624 |
| 591 | 349281 | 206425071 | 24.3105 | 8.3919 | 651 | 423801 | 275894451 | 25.5147 | 8.6668 |
| 592 | 350464 | 207474688 | 24.3311 | 8.3967 | 652 | 425104 | 277167808 | 25.5343 | 8.6713 |
| 593 | 351649 | 208527857 | 24.3516 | 8.4014 | 653 | 426409 | 278445077 | 25.5539 | 8.6757 |
| 594 | 352836 | 209584584 | 24.3721 | 8.4061 | 654 | 427716 | 279726264 | 25.5734 | 8.6801 |
| 595 | 354025 | 210644875 | 24.3926 | 8.4108 | 655 | 429025 | 281011375 | 25.5930 | 8.6845 |
| 596 | 355216 | 211708736 | 24.4131 | 8.4155 | 656 | 430336 | 282300416 | 25.6125 | 8.6889 |
| 597 | 356409 | 212776173 | 24.4336 | 8.4202 | 657 | 431649 | 283593393 | 25.6320 | 8.6934 |
| 598 | 357604 | 213847192 | 24.4540 | 8.4249 | 658 | 432964 | 284890312 | 25.6515 | 8.6978 |
| 599 | 358801 | 214921799 | 24.4745 | 8.4296 | 659 | 434281 | 286191179 | 25.6710 | 8.7022 |
| 600 | 360000 | 216000000 | 24.4949 | 8.4343 | 660 | 435600 | 287496000 | 25.6905 | 8.7066 |
| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|-----|----------------|----------------|------------|---------------|
| 660 | 435600 | 287496000 | 25.6095 | 8.7066 | 720 | 518400 | 373248000 | 26.8328 | 8.9628 |
| 661 | 436921 | 288804781 | 25.7099 | 8.7110 | 721 | 519841 | 374805361 | 26.8514 | 8.9670 |
| 662 | 438244 | 290117528 | 25.7294 | 8.7154 | 722 | 521284 | 376367048 | 26.8701 | 8.9711 |
| 663 | 439569 | 291434247 | 25.7488 | 8.7198 | 723 | 522729 | 377933067 | 26.8887 | 8.9752 |
| 664 | 440896 | 292754944 | 25.7682 | 8.7241 | 724 | 524176 | 379503424 | 26.9072 | 8.9794 |
| 665 | 442225 | 294079625 | 25.7876 | 8.7285 | 725 | 525625 | 381078125 | 26.9258 | 8.9835 |
| 666 | 443556 | 295408296 | 25.8070 | 8.7329 | 726 | 527076 | 382657176 | 26.9444 | 8.9876 |
| 667 | 444889 | 296740963 | 25.8263 | 8.7373 | 727 | 528529 | 384240583 | 26.9629 | 8.9918 |
| 668 | 446224 | 298077632 | 25.8457 | 8.7416 | 728 | 529984 | 385828352 | 26.9815 | 8.9959 |
| 669 | 447561 | 299418309 | 25.8650 | 8.7460 | 729 | 531441 | 387420489 | 27.0000 | 9.0000 |
| 670 | 448900 | 300763000 | 25.8844 | 8.7503 | 730 | 532900 | 389017000 | 27.0185 | 9.0041 |
| 671 | 450241 | 302111711 | 25.9037 | 8.7547 | 731 | 534361 | 390617891 | 27.0370 | 9.0082 |
| 672 | 451584 | 303464448 | 25.9230 | 8.7590 | 732 | 535824 | 392223168 | 27.0555 | 9.0123 |
| 673 | 452929 | 304821217 | 25.9422 | 8.7634 | 733 | 537289 | 393832837 | 27.0740 | 9.0164 |
| 674 | 454276 | 306182024 | 25.9615 | 8.7677 | 734 | 538756 | 395446904 | 27.0924 | 9.0205 |
| 675 | 455625 | 307546875 | 25.9808 | 8.7721 | 735 | 540225 | 397065375 | 27.1109 | 9.0246 |
| 676 | 456976 | 308915776 | 26.0000 | 8.7764 | 736 | 541696 | 398688256 | 27.1293 | 9.0287 |
| 677 | 458329 | 310288733 | 26.0192 | 8.7807 | 737 | 543169 | 400315553 | 27.1477 | 9.0328 |
| 678 | 459684 | 311665752 | 26.0384 | 8.7850 | 738 | 544644 | 401947272 | 27.1662 | 9.0369 |
| 679 | 461041 | 313046839 | 26.0576 | 8.7893 | 739 | 546121 | 403583419 | 27.1846 | 9.0410 |
| 680 | 462400 | 314432000 | 26.0768 | 8.7937 | 740 | 547600 | 405224000 | 27.2029 | 9.0450 |
| 681 | 463761 | 315821241 | 26.0960 | 8.7980 | 741 | 549081 | 406869021 | 27.2213 | 9.0491 |
| 682 | 465124 | 317214568 | 26.1151 | 8.8023 | 742 | 550564 | 408518488 | 27.2397 | 9.0532 |
| 683 | 466489 | 318611087 | 26.1343 | 8.8066 | 743 | 552049 | 410172407 | 27.2580 | 9.0572 |
| 684 | 467856 | 320013504 | 26.1534 | 8.8109 | 744 | 553536 | 411830784 | 27.2764 | 9.0613 |
| 685 | 469225 | 321419125 | 26.1725 | 8.8152 | 745 | 555025 | 413493625 | 27.2947 | 9.0654 |
| 686 | 470596 | 322828856 | 26.1916 | 8.8194 | 746 | 556516 | 415160936 | 27.3130 | 9.0694 |
| 687 | 471969 | 324242703 | 26.2107 | 8.8237 | 747 | 558009 | 416832723 | 27.3313 | 9.0735 |
| 688 | 473344 | 325660672 | 26.2298 | 8.8280 | 748 | 559504 | 418508992 | 27.3496 | 9.0775 |
| 689 | 474721 | 327082769 | 26.2488 | 8.8323 | 749 | 561001 | 420189749 | 27.3679 | 9.0816 |
| 690 | 476100 | 328509000 | 26.2679 | 8.8366 | 750 | 562500 | 421875000 | 27.3861 | 9.0856 |
| 691 | 477481 | 329939371 | 26.2869 | 8.8408 | 751 | 564001 | 423564751 | 27.4044 | 9.0896 |
| 692 | 478864 | 331373888 | 26.3059 | 8.8451 | 752 | 565504 | 425259008 | 27.4226 | 9.0937 |
| 693 | 480249 | 332812557 | 26.3249 | 8.8493 | 753 | 567009 | 426957777 | 27.4408 | 9.0977 |
| 694 | 481636 | 334255384 | 26.3439 | 8.8536 | 754 | 568516 | 428661064 | 27.4591 | 9.1017 |
| 695 | 483025 | 335702375 | 26.3629 | 8.8578 | 755 | 570025 | 430368875 | 27.4773 | 9.1057 |
| 696 | 484416 | 337153536 | 26.3818 | 8.8621 | 756 | 571536 | 432081216 | 27.4955 | 9.1098 |
| 697 | 485809 | 338608873 | 26.4008 | 8.8663 | 757 | 573049 | 433798093 | 27.5136 | 9.1138 |
| 698 | 487204 | 340068392 | 26.4197 | 8.8706 | 758 | 574564 | 435519512 | 27.5318 | 9.1178 |
| 699 | 488601 | 341532009 | 26.4386 | 8.8748 | 759 | 576081 | 437245479 | 27.5500 | 9.1218 |
| 700 | 490000 | 343000000 | 26.4575 | 8.8790 | 760 | 577600 | 438976000 | 27.5681 | 9.1258 |
| 701 | 491401 | 344472101 | 26.4764 | 8.8833 | 761 | 579121 | 440711081 | 27.5862 | 9.1298 |
| 702 | 492804 | 345948408 | 26.4953 | 8.8875 | 762 | 580644 | 442450728 | 27.6043 | 9.1338 |
| 703 | 494209 | 347428927 | 26.5141 | 8.8917 | 763 | 582169 | 444194947 | 27.6225 | 9.1378 |
| 704 | 495616 | 348913664 | 26.5330 | 8.8959 | 764 | 583696 | 445943744 | 27.6405 | 9.1418 |
| 705 | 497025 | 350402625 | 26.5518 | 8.9001 | 765 | 585225 | 447697125 | 27.6586 | 9.1458 |
| 706 | 498436 | 351895816 | 26.5707 | 8.9043 | 766 | 586756 | 449455096 | 27.6767 | 9.1498 |
| 707 | 499849 | 353393243 | 26.5895 | 8.9085 | 767 | 588289 | 451217663 | 27.6948 | 9.1537 |
| 708 | 501264 | 354894912 | 26.6083 | 8.9127 | 768 | 589824 | 452984832 | 27.7128 | 9.1577 |
| 709 | 502681 | 356400829 | 26.6271 | 8.9169 | 769 | 591361 | 454756609 | 27.7308 | 9.1617 |
| 710 | 504100 | 357911000 | 26.6458 | 8.9211 | 770 | 592900 | 456533000 | 27.7489 | 9.1657 |
| 711 | 505521 | 359425431 | 26.6646 | 8.9253 | 771 | 594441 | 458314011 | 27.7669 | 9.1696 |
| 712 | 506944 | 360944128 | 26.6833 | 8.9295 | 772 | 595984 | 460099648 | 27.7849 | 9.1736 |
| 713 | 508369 | 362467097 | 26.7021 | 8.9337 | 773 | 597529 | 461899177 | 27.8029 | 9.1775 |
| 714 | 509796 | 363994344 | 26.7208 | 8.9378 | 774 | 599076 | 463684824 | 27.8209 | 9.1815 |
| 715 | 511225 | 365525875 | 26.7395 | 8.9420 | 775 | 600625 | 465484375 | 27.8388 | 9.1855 |
| 716 | 512656 | 367061696 | 26.7582 | 8.9462 | 776 | 602176 | 467288576 | 27.8568 | 9.1894 |
| 717 | 514089 | 368601813 | 26.7769 | 8.9503 | 777 | 603729 | 469097433 | 27.8747 | 9.1933 |
| 718 | 515524 | 370146232 | 26.7955 | 8.9545 | 778 | 605284 | 470910952 | 27.8927 | 9.1973 |
| 719 | 516961 | 371694959 | 26.8142 | 8.9587 | 779 | 606841 | 472729139 | 27.9106 | 9.2012 |
| 720 | 518400 | 373248000 | 26.8328 | 8.9628 | 780 | 608400 | 474552000 | 27.9285 | 9.2052 |
| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|-----|----------------|----------------|------------|---------------|
| 780 | 608400 | 474552000 | 27.9285 | 9.2052 | 840 | 705600 | 592704000 | 28.9828 | 9.4354 |
| 781 | 609961 | 47379541 | 27.9404 | 9.2091 | 841 | 707281 | 594823321 | 29.0000 | 9.4391 |
| 782 | 611524 | 478211768 | 27.9643 | 9.2130 | 842 | 708964 | 596947688 | 29.0172 | 9.4429 |
| 783 | 613089 | 480048687 | 27.9821 | 9.2170 | 843 | 710649 | 599077107 | 29.0345 | 9.4466 |
| 784 | 614656 | 481890304 | 28.0000 | 9.2209 | 844 | 712336 | 601211584 | 29.0517 | 9.4503 |
| 785 | 616225 | 483736625 | 28.0179 | 9.2248 | 845 | 714025 | 603351125 | 29.0689 | 9.4541 |
| 786 | 617796 | 485587656 | 28.0357 | 9.2287 | 846 | 715716 | 605495736 | 29.0861 | 9.4578 |
| 787 | 619369 | 487443403 | 28.0535 | 9.2326 | 847 | 717409 | 607645423 | 29.1033 | 9.4615 |
| 788 | 620944 | 489303872 | 28.0713 | 9.2365 | 848 | 719104 | 609800192 | 29.1204 | 9.4652 |
| 789 | 622521 | 491160609 | 28.0891 | 9.2404 | 849 | 720801 | 611960049 | 29.1376 | 9.4690 |
| 790 | 624100 | 493039000 | 28.1069 | 9.2443 | 850 | 722500 | 614125000 | 29.1548 | 9.4727 |
| 791 | 625681 | 494913671 | 28.1247 | 9.2482 | 851 | 724201 | 616295051 | 29.1719 | 9.4764 |
| 792 | 627264 | 496793088 | 28.1425 | 9.2521 | 852 | 725904 | 618470208 | 29.1890 | 9.4801 |
| 793 | 628849 | 498677257 | 28.1603 | 9.2560 | 853 | 727609 | 620650477 | 29.2062 | 9.4838 |
| 794 | 630436 | 500566184 | 28.1780 | 9.2599 | 854 | 729316 | 622835864 | 29.2233 | 9.4875 |
| 795 | 632025 | 502459875 | 28.1957 | 9.2638 | 855 | 731025 | 625026375 | 29.2404 | 9.4912 |
| 796 | 633616 | 504358336 | 28.2135 | 9.2677 | 856 | 732736 | 627222016 | 29.2575 | 9.4949 |
| 797 | 635209 | 506261573 | 28.2312 | 9.2716 | 857 | 734449 | 629422793 | 29.2746 | 9.4986 |
| 798 | 636804 | 508169592 | 28.2489 | 9.2754 | 858 | 736164 | 631628712 | 29.2916 | 9.5023 |
| 799 | 638401 | 510082399 | 28.2666 | 9.2793 | 859 | 737881 | 633839779 | 29.3087 | 9.5060 |
| 800 | 640000 | 512000000 | 28.2843 | 9.2832 | 860 | 739600 | 636056000 | 29.3258 | 9.5097 |
| 801 | 641601 | 513922401 | 28.3019 | 9.2870 | 861 | 741321 | 638277381 | 29.3428 | 9.5134 |
| 802 | 643204 | 515849608 | 28.3196 | 9.2909 | 862 | 743044 | 640503928 | 29.3598 | 9.5171 |
| 803 | 644809 | 517781627 | 28.3373 | 9.2948 | 863 | 744769 | 642735647 | 29.3769 | 9.5207 |
| 804 | 646416 | 519718464 | 28.3549 | 9.2986 | 864 | 746496 | 644972544 | 29.3939 | 9.5244 |
| 805 | 648025 | 521660125 | 28.3725 | 9.3025 | 865 | 748225 | 647214025 | 29.4109 | 9.5281 |
| 806 | 649636 | 523606616 | 28.3901 | 9.3063 | 866 | 749956 | 649461896 | 29.4279 | 9.5317 |
| 807 | 651249 | 525557943 | 28.4077 | 9.3102 | 867 | 751689 | 651714363 | 29.4449 | 9.5354 |
| 808 | 652864 | 527514112 | 28.4253 | 9.3140 | 868 | 753424 | 653972032 | 29.4618 | 9.5391 |
| 809 | 654481 | 529475129 | 28.4429 | 9.3179 | 869 | 755161 | 656234909 | 29.4788 | 9.5427 |
| 810 | 656100 | 531441000 | 28.4605 | 9.3217 | 870 | 756900 | 658503000 | 29.4958 | 9.5464 |
| 811 | 657721 | 533411731 | 28.4781 | 9.3255 | 871 | 758641 | 660776311 | 29.5127 | 9.5501 |
| 812 | 659344 | 535387328 | 28.4956 | 9.3294 | 872 | 760384 | 663054848 | 29.5296 | 9.5537 |
| 813 | 660969 | 537367797 | 28.5132 | 9.3332 | 873 | 762129 | 665338617 | 29.5466 | 9.5574 |
| 814 | 662596 | 539353144 | 28.5307 | 9.3370 | 874 | 763876 | 667627624 | 29.5635 | 9.5610 |
| 815 | 664225 | 541343375 | 28.5482 | 9.3408 | 875 | 765625 | 669921875 | 29.5804 | 9.5647 |
| 816 | 665856 | 543338496 | 28.5657 | 9.3447 | 876 | 767376 | 672221376 | 29.5973 | 9.5683 |
| 817 | 667489 | 545338513 | 28.5832 | 9.3485 | 877 | 769129 | 674526133 | 29.6142 | 9.5719 |
| 818 | 669124 | 547343432 | 28.6007 | 9.3523 | 878 | 770884 | 676836152 | 29.6311 | 9.5756 |
| 819 | 670761 | 549353259 | 28.6182 | 9.3561 | 879 | 772641 | 679151439 | 29.6479 | 9.5792 |
| 820 | 672400 | 551368000 | 28.6356 | 9.3599 | 880 | 774400 | 681472000 | 29.6648 | 9.5828 |
| 821 | 674041 | 553387661 | 28.6531 | 9.3637 | 881 | 776161 | 683797841 | 29.6816 | 9.5865 |
| 822 | 675684 | 555412248 | 28.6705 | 9.3675 | 882 | 777924 | 686128968 | 29.6985 | 9.5901 |
| 823 | 677329 | 557441767 | 28.6880 | 9.3713 | 883 | 779689 | 688465387 | 29.7153 | 9.5937 |
| 824 | 678976 | 559476224 | 28.7054 | 9.3751 | 884 | 781456 | 690807104 | 29.7321 | 9.5973 |
| 825 | 680625 | 561515625 | 28.7228 | 9.3789 | 885 | 783225 | 693154125 | 29.7489 | 9.6010 |
| 826 | 682276 | 563559976 | 28.7402 | 9.3827 | 886 | 784996 | 695506456 | 29.7658 | 9.6046 |
| 827 | 683929 | 565609283 | 28.7576 | 9.3865 | 887 | 786769 | 697864103 | 29.7825 | 9.6082 |
| 828 | 685584 | 567663552 | 28.7750 | 9.3902 | 888 | 788544 | 700227072 | 29.7993 | 9.6118 |
| 829 | 687241 | 569722789 | 28.7924 | 9.3940 | 889 | 790321 | 702595369 | 29.8161 | 9.6154 |
| 830 | 688900 | 571787000 | 28.8097 | 9.3978 | 890 | 792100 | 704969000 | 29.8329 | 9.6190 |
| 831 | 690561 | 573856191 | 28.8271 | 9.4016 | 891 | 793881 | 707347971 | 29.8496 | 9.6226 |
| 832 | 692224 | 575930368 | 28.8444 | 9.4053 | 892 | 795664 | 709732288 | 29.8664 | 9.6262 |
| 833 | 693889 | 578009537 | 28.8617 | 9.4091 | 893 | 797449 | 712121957 | 29.8831 | 9.6298 |
| 834 | 695556 | 580093704 | 28.8791 | 9.4129 | 894 | 799236 | 714516984 | 29.8998 | 9.6334 |
| 835 | 697225 | 582182875 | 28.8964 | 9.4166 | 895 | 801025 | 716917375 | 29.9166 | 9.6370 |
| 836 | 698896 | 584277056 | 28.9137 | 9.4204 | 896 | 802816 | 719323136 | 29.9333 | 9.6406 |
| 837 | 700569 | 586376253 | 28.9310 | 9.4241 | 897 | 804609 | 721734273 | 29.9500 | 9.6442 |
| 838 | 702244 | 588480472 | 28.9482 | 9.4279 | 898 | 806404 | 724150792 | 29.9666 | 9.6477 |
| 839 | 703921 | 590589719 | 28.9655 | 9.4316 | 899 | 808201 | 726572699 | 29.9833 | 9.6513 |
| 840 | 705600 | 592704000 | 28.9828 | 9.4354 | 900 | 810000 | 729000000 | 30.0000 | 9.6549 |
| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |

| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |
|-----|----------------|----------------|------------|---------------|------|----------------|----------------|------------|---------------|
| 900 | 810000 | 729000000 | 30.0000 | 9.6549 | 960 | 921600 | 884736000 | 30.9839 | 9.8648 |
| 901 | 811801 | 731432701 | 30.0167 | 9.6585 | 961 | 923521 | 887503681 | 31.0000 | 9.8683 |
| 902 | 813604 | 733870808 | 30.0333 | 9.6620 | 962 | 925444 | 890277128 | 31.0161 | 9.8717 |
| 903 | 815409 | 736314327 | 30.0500 | 9.6656 | 963 | 927369 | 893056347 | 31.0322 | 9.8751 |
| 904 | 817216 | 738763264 | 30.0666 | 9.6692 | 964 | 929296 | 895841344 | 31.0483 | 9.8785 |
| 905 | 819025 | 741217625 | 30.0832 | 9.6727 | 965 | 931225 | 898632125 | 31.0644 | 9.8819 |
| 906 | 820836 | 743677416 | 30.0998 | 9.6763 | 966 | 933156 | 901428696 | 31.0805 | 9.8854 |
| 907 | 822649 | 746142643 | 30.1164 | 9.6799 | 967 | 935089 | 904231063 | 31.0966 | 9.8888 |
| 908 | 824464 | 748613312 | 30.1330 | 9.6834 | 968 | 937024 | 907039329 | 31.1127 | 9.8922 |
| 909 | 826281 | 751080420 | 30.1496 | 9.6870 | 969 | 938961 | 909853209 | 31.1288 | 9.8956 |
| 910 | 828100 | 753571000 | 30.1662 | 9.6905 | 970 | 940900 | 912673000 | 31.1448 | 9.8990 |
| 911 | 829921 | 756058031 | 30.1828 | 9.6941 | 971 | 942841 | 915498611 | 31.1609 | 9.9024 |
| 912 | 831744 | 758550528 | 30.1993 | 9.6976 | 972 | 944784 | 918330048 | 31.1769 | 9.9058 |
| 913 | 833569 | 761048497 | 30.2159 | 9.7012 | 973 | 946729 | 921167317 | 31.1929 | 9.9092 |
| 914 | 835396 | 763551944 | 30.2324 | 9.7047 | 974 | 948676 | 924010424 | 31.2090 | 9.9126 |
| 915 | 837225 | 766060875 | 30.2490 | 9.7082 | 975 | 950625 | 926859375 | 31.2250 | 9.9160 |
| 916 | 839056 | 768575296 | 30.2655 | 9.7118 | 976 | 952576 | 929714176 | 31.2410 | 9.9194 |
| 917 | 840889 | 771095213 | 30.2820 | 9.7153 | 977 | 954529 | 932574833 | 31.2570 | 9.9227 |
| 918 | 842724 | 773620632 | 30.2985 | 9.7188 | 978 | 956484 | 935441352 | 31.2730 | 9.9261 |
| 919 | 844561 | 776151559 | 30.3150 | 9.7224 | 979 | 958441 | 938313739 | 31.2890 | 9.9295 |
| 920 | 846400 | 778688000 | 30.3315 | 9.7259 | 980 | 960400 | 941192000 | 31.3050 | 9.9329 |
| 921 | 848241 | 781229961 | 30.3480 | 9.7294 | 981 | 962361 | 944076141 | 31.3209 | 9.9363 |
| 922 | 850084 | 783777448 | 30.3645 | 9.7329 | 982 | 964324 | 946966168 | 31.3369 | 9.9396 |
| 923 | 851929 | 786330467 | 30.3809 | 9.7364 | 983 | 966289 | 949862087 | 31.3528 | 9.9430 |
| 924 | 853776 | 788889024 | 30.3974 | 9.7400 | 984 | 968256 | 952763904 | 31.3688 | 9.9464 |
| 925 | 855625 | 791453125 | 30.4138 | 9.7435 | 985 | 970225 | 955671625 | 31.3847 | 9.9497 |
| 926 | 857476 | 794022776 | 30.4302 | 9.7470 | 986 | 972196 | 958585256 | 31.4006 | 9.9531 |
| 927 | 859329 | 796597983 | 30.4467 | 9.7505 | 987 | 974169 | 961504803 | 31.4166 | 9.9565 |
| 928 | 861184 | 799178752 | 30.4631 | 9.7540 | 988 | 976144 | 964430272 | 31.4325 | 9.9598 |
| 929 | 863041 | 801765080 | 30.4795 | 9.7575 | 989 | 978121 | 967361660 | 31.4484 | 9.9632 |
| 930 | 864900 | 804357000 | 30.4959 | 9.7610 | 990 | 980100 | 970299000 | 31.4643 | 9.9666 |
| 931 | 866761 | 806954491 | 30.5123 | 9.7645 | 991 | 982081 | 973242271 | 31.4802 | 9.9699 |
| 932 | 868624 | 809557568 | 30.5287 | 9.7680 | 992 | 984064 | 976191488 | 31.4960 | 9.9733 |
| 933 | 870489 | 812166237 | 30.5450 | 9.7715 | 993 | 986049 | 979146657 | 31.5119 | 9.9766 |
| 934 | 872356 | 814780804 | 30.5614 | 9.7750 | 994 | 988036 | 982107784 | 31.5278 | 9.9800 |
| 935 | 874225 | 817400375 | 30.5778 | 9.7785 | 995 | 990025 | 985074875 | 31.5436 | 9.9833 |
| 936 | 876096 | 820025856 | 30.5941 | 9.7819 | 996 | 992016 | 988047936 | 31.5595 | 9.9866 |
| 937 | 877969 | 822656953 | 30.6105 | 9.7854 | 997 | 994009 | 991026973 | 31.5753 | 9.9900 |
| 938 | 879844 | 825293672 | 30.6268 | 9.7889 | 998 | 996004 | 994019192 | 31.5911 | 9.9933 |
| 939 | 881721 | 827936019 | 30.6431 | 9.7924 | 999 | 998001 | 997002999 | 31.6070 | 9.9967 |
| 940 | 883600 | 830584000 | 30.6594 | 9.7959 | 1000 | 1000000 | 1000000000 | 31.6228 | 10.0000 |
| 941 | 885481 | 833237621 | 30.6757 | 9.7993 | 1001 | 1002001 | 1003003001 | 31.6386 | 10.0033 |
| 942 | 887364 | 835896888 | 30.6920 | 9.8028 | 1002 | 1004004 | 1006012008 | 31.6544 | 10.0067 |
| 943 | 889249 | 838561807 | 30.7083 | 9.8063 | 1003 | 1006009 | 1009027027 | 31.6702 | 10.0100 |
| 944 | 891136 | 841232834 | 30.7246 | 9.8097 | 1004 | 1008016 | 1012048064 | 31.6860 | 10.0133 |
| 945 | 893025 | 843908625 | 30.7409 | 9.8132 | 1005 | 1010025 | 1015075125 | 31.7017 | 10.0166 |
| 946 | 894916 | 846590536 | 30.7571 | 9.8167 | 1006 | 1012036 | 1018108216 | 31.7175 | 10.0200 |
| 947 | 896809 | 849278123 | 30.7734 | 9.8201 | 1007 | 1014049 | 1021147343 | 31.7333 | 10.0233 |
| 948 | 898704 | 851971392 | 30.7896 | 9.8236 | 1008 | 1016064 | 1024192512 | 31.7490 | 10.0266 |
| 949 | 900601 | 854670349 | 30.8058 | 9.8270 | 1009 | 1018081 | 1027243729 | 31.7648 | 10.0299 |
| 950 | 902500 | 857375000 | 30.8221 | 9.8305 | 1010 | 1020100 | 1030301000 | 31.7805 | 10.0332 |
| 951 | 904401 | 860085351 | 30.8383 | 9.8339 | 1011 | 1022121 | 1033364331 | 31.7962 | 10.0365 |
| 952 | 906304 | 862801408 | 30.8545 | 9.8374 | 1012 | 1024144 | 1036433728 | 31.8119 | 10.0398 |
| 953 | 908209 | 865523177 | 30.8707 | 9.8408 | 1013 | 1026169 | 1039509197 | 31.8277 | 10.0431 |
| 954 | 910116 | 868250664 | 30.8869 | 9.8443 | 1014 | 1028196 | 1042590744 | 31.8434 | 10.0465 |
| 955 | 912025 | 870983875 | 30.9031 | 9.8477 | 1015 | 1030225 | 1045678375 | 31.8591 | 10.0498 |
| 956 | 913936 | 873722816 | 30.9192 | 9.8511 | 1016 | 1032256 | 1048772096 | 31.8748 | 10.0531 |
| 957 | 915849 | 876467493 | 30.9354 | 9.8546 | 1017 | 1034289 | 1051871913 | 31.8904 | 10.0563 |
| 958 | 917764 | 879217912 | 30.9516 | 9.8580 | 1018 | 1036324 | 1054977832 | 31.9061 | 10.0596 |
| 959 | 919681 | 881974079 | 30.9677 | 9.8614 | 1019 | 1038361 | 1058089859 | 31.9218 | 10.0629 |
| 960 | 921600 | 884736000 | 30.9839 | 9.8648 | 1020 | 1040400 | 1061208000 | 31.9374 | 10.0662 |
| N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ | N | N ² | N ³ | \sqrt{N} | $\sqrt[3]{N}$ |

VII
TABLE OF FACTORS
FOR
COMPUTING PROBABLE ERRORS.

| n | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n-1}}$ | $\frac{.6745}{\sqrt{n-1}}$ | n | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n-1}}$ | $\frac{.6745}{\sqrt{n-1}}$ |
|-----|-------------------------------|-------------------------------|----------------------------|----------------------------|-----|-------------------------------|-------------------------------|----------------------------|----------------------------|
| | | | | | 40 | 0.0171 | 8.23241 | 0.1080 | 9.03344 |
| 2 | 0.4769 | 9.67846 | 0.6745 | 9.82898 | 41 | 0.0167 | 8.22155 | 0.1066 | 9.02795 |
| 3 | 0.2754 | 9.43990 | 0.4769 | 9.67846 | 42 | 0.0163 | 8.21096 | 0.1053 | 9.02258 |
| 4 | 0.1947 | 9.28938 | 0.3894 | 9.59041 | 43 | 0.0159 | 8.20062 | 0.1041 | 9.01735 |
| 5 | 0.1508 | 9.17846 | 0.3372 | 9.52795 | 44 | 0.0155 | 8.19051 | 0.1029 | 9.01224 |
| 6 | 0.1231 | 9.09041 | 0.3016 | 9.47949 | 45 | 0.0152 | 8.18064 | 0.1017 | 9.00725 |
| 7 | 0.1041 | 9.01735 | 0.2754 | 9.43990 | 46 | 0.0148 | 8.17099 | 0.1005 | 9.00237 |
| 8 | 0.0901 | 8.95488 | 0.2549 | 9.40643 | 47 | 0.0145 | 8.16155 | 0.0994 | 8.99760 |
| 9 | 0.0795 | 8.90031 | 0.2385 | 9.37743 | 48 | 0.0142 | 8.15231 | 0.0984 | 8.99283 |
| 10 | 0.0711 | 8.85185 | 0.2248 | 9.35185 | 49 | 0.0139 | 8.14326 | 0.0974 | 8.98835 |
| 11 | 0.0643 | 8.80828 | 0.2133 | 9.32898 | 50 | 0.0136 | 8.13439 | 0.0964 | 8.98388 |
| 12 | 0.0587 | 8.76869 | 0.2029 | 9.30828 | 51 | 0.0134 | 8.12571 | 0.0954 | 8.97949 |
| 13 | 0.0540 | 8.73241 | 0.1947 | 9.28938 | 52 | 0.0131 | 8.11719 | 0.0944 | 8.97519 |
| 14 | 0.0500 | 8.69894 | 0.1871 | 9.27200 | 53 | 0.0128 | 8.10884 | 0.0935 | 8.97097 |
| 15 | 0.0465 | 8.66787 | 0.1803 | 9.25591 | 54 | 0.0126 | 8.10064 | 0.0926 | 8.96684 |
| 16 | 0.0435 | 8.63887 | 0.1742 | 9.24093 | 55 | 0.0124 | 8.09260 | 0.0918 | 8.96278 |
| 17 | 0.0409 | 8.61169 | 0.1686 | 9.22692 | 56 | 0.0122 | 8.08470 | 0.0900 | 8.95879 |
| 18 | 0.0386 | 8.58611 | 0.1636 | 9.21375 | 57 | 0.0119 | 8.07694 | 0.0901 | 8.95488 |
| 19 | 0.0365 | 8.56196 | 0.1590 | 9.20134 | 58 | 0.0117 | 8.06932 | 0.0893 | 8.95104 |
| 20 | 0.0346 | 8.53908 | 0.1547 | 9.18960 | 59 | 0.0115 | 8.06184 | 0.0886 | 8.94726 |
| 21 | 0.0329 | 8.51735 | 0.1508 | 9.17846 | 60 | 0.0113 | 8.05447 | 0.0878 | 8.94355 |
| 22 | 0.0314 | 8.49665 | 0.1472 | 9.16787 | 61 | 0.0111 | 8.04723 | 0.0871 | 8.93990 |
| 23 | 0.0300 | 8.47690 | 0.1438 | 9.15776 | 62 | 0.0110 | 8.04011 | 0.0864 | 8.93631 |
| 24 | 0.0287 | 8.45801 | 0.1406 | 9.14811 | 63 | 0.0108 | 8.03311 | 0.0857 | 8.93278 |
| 25 | 0.0275 | 8.43990 | 0.1377 | 9.13887 | 64 | 0.0106 | 8.02622 | 0.0850 | 8.92931 |
| 26 | 0.0265 | 8.42252 | 0.1349 | 9.13001 | 65 | 0.0105 | 8.01943 | 0.0843 | 8.92589 |
| 27 | 0.0255 | 8.40581 | 0.1323 | 9.12149 | 66 | 0.0103 | 8.01275 | 0.0837 | 8.92252 |
| 28 | 0.0245 | 8.38971 | 0.1298 | 9.11329 | 67 | 0.0101 | 8.00617 | 0.0830 | 8.91920 |
| 29 | 0.0237 | 8.37420 | 0.1275 | 9.10540 | 68 | 0.0100 | 7.99968 | 0.0824 | 8.91594 |
| 30 | 0.0229 | 8.35922 | 0.1252 | 9.09778 | 69 | 0.0098 | 7.99330 | 0.0818 | 8.91272 |
| 31 | 0.0221 | 8.34473 | 0.1231 | 9.09041 | 70 | 0.0097 | 7.98700 | 0.0812 | 8.90955 |
| 32 | 0.0214 | 8.33072 | 0.1211 | 9.08329 | 71 | 0.0096 | 7.98080 | 0.0806 | 8.90643 |
| 33 | 0.0208 | 8.31714 | 0.1192 | 9.07649 | 72 | 0.0094 | 7.97468 | 0.0800 | 8.90335 |
| 34 | 0.0201 | 8.30398 | 0.1174 | 9.06972 | 73 | 0.0093 | 7.96865 | 0.0795 | 8.90031 |
| 35 | 0.0196 | 8.29120 | 0.1157 | 9.06324 | 74 | 0.0092 | 7.96270 | 0.0789 | 8.89731 |
| 36 | 0.0190 | 8.27879 | 0.1140 | 9.05694 | 75 | 0.0091 | 7.95683 | 0.0784 | 8.89436 |
| 37 | 0.0185 | 8.26672 | 0.1124 | 9.05082 | 76 | 0.0089 | 7.95104 | 0.0779 | 8.89144 |
| 38 | 0.0180 | 8.25498 | 0.1109 | 9.04487 | 77 | 0.0088 | 7.94532 | 0.0774 | 8.88857 |
| 39 | 0.0175 | 8.24355 | 0.1094 | 9.03908 | 78 | 0.0087 | 7.93968 | 0.0769 | 8.88573 |
| 40 | 0.0171 | 8.23241 | 0.1080 | 9.03344 | 79 | 0.0086 | 7.93411 | 0.0764 | 8.88293 |
| 80 | | | | | 80 | 0.0085 | 7.92962 | 0.0759 | 8.88016 |
| n | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n-1}}$ | $\frac{.6745}{\sqrt{n-1}}$ | n | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n(n-1)}}$ | $\frac{.6745}{\sqrt{n-1}}$ | $\frac{.6745}{\sqrt{n-1}}$ |

FORMULAS.

GENERAL TRIGONOMETRIC FORMULAS.

- (1) $\sin^2 a + \cos^2 a = 1.$
- (2) $\sin(a \pm \beta) = \sin a \cos \beta \pm \cos a \sin \beta.$
- (3) $\cos(a \pm \beta) = \cos a \cos \beta \mp \sin a \sin \beta.$
- (4) $\tan(a \pm \beta) = \frac{\tan a \pm \tan \beta}{1 \mp \tan a \tan \beta}.$
- (5) $\sin 2a = 2 \sin a \cos a.$
- (6) $\cos 2a = \cos^2 a - \sin^2 a = 1 - 2 \sin^2 a = 2 \cos^2 a - 1.$
- (7) $\tan 2a = \frac{2 \tan a}{1 - \tan^2 a}.$
- (8) $\sin^2 a = \frac{1}{2}(1 - \cos 2a).$
- (9) $\cos^2 a = \frac{1}{2}(1 + \cos 2a).$
- (10) $\tan a = \frac{\sin 2a}{1 + \cos 2a}.$
- (11) $\sin a + \sin \beta = 2 \sin \frac{1}{2}(a + \beta) \cos \frac{1}{2}(a - \beta).$
- (12) $\sin a - \sin \beta = 2 \cos \frac{1}{2}(a + \beta) \sin \frac{1}{2}(a - \beta).$
- (13) $\cos a + \cos \beta = 2 \cos \frac{1}{2}(a + \beta) \cos \frac{1}{2}(a - \beta).$
- (14) $\cos \beta - \cos a = 2 \sin \frac{1}{2}(a + \beta) \sin \frac{1}{2}(a - \beta).$
- (15) $\sin^2 a - \sin^2 \beta = \cos^2 \beta - \cos^2 a = \sin(a + \beta) \sin(a - \beta).$
- (16) $\cos^2 a - \sin^2 \beta = \cos(a + \beta) \cos(a - \beta).$
- (17) $\tan a \pm \tan \beta = \frac{\sin(a \pm \beta)}{\cos a \cos \beta}.$
- (18) $\cot a \pm \cot \beta = \pm \frac{\sin(a \pm \beta)}{\sin a \sin \beta}.$
- (19) $\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \text{etc.}$
- (20) $\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \text{etc.}$

FORMULAS FOR PLANE TRIANGLES.

In these formulas a , b and c denote the sides and A , B and C the opposite angles. K denotes the area and $s = \frac{1}{2}(a + b + c)$. Only one formula of each set is given, the other two may be obtained by advancing the letters.

- (21) $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}.$
- (22) $\frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}.$
- (23) $a^2 = b^2 + c^2 - 2bc \cos A.$
- (24) $a = b \cos C + c \cos B.$
- (25) $\sin \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{bc}},$

$$(26) \quad \cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}}.$$

$$(27) \quad \tan \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}}.$$

$$(28) \quad K = \frac{1}{2} ab \sin C = \sqrt{s(s-a)(s-b)(s-c)}.$$

FORMULAS FOR RIGHT SPHERICAL TRIANGLES.

Denoting the right angle by C , the formulas are

$$(29) \quad \sin a = \sin A \sin c.$$

$$(30) \quad \sin b = \sin B \sin c.$$

$$(31) \quad \tan a = \cos B \tan c = \tan A \sin b.$$

$$(32) \quad \tan b = \cos A \tan c = \tan B \sin a.$$

$$(33) \quad \cos A = \cos a \sin B.$$

$$(34) \quad \cos B = \cos b \sin A.$$

$$(35) \quad \cos c = \cos a \cos b.$$

$$(36) \quad \cos c = \cot A \cot B.$$

FORMULAS FOR THE GENERAL SPHERICAL TRIANGLE.

$$(37) \quad \cos a = \cos b \cos c + \sin b \sin c \cos A.$$

$$(38) \quad \sin a \sin B = \sin b \sin A.$$

$$(39) \quad \sin a \cos B = \cos b \sin c - \sin b \cos c \cos A.$$

$$(40) \quad \sin a \cos C = \cos c \sin b - \sin c \cos b \cos A.$$

$$(41) \quad \sin A \cot B = \cot b \sin c - \cos c \cos A.$$

$$(42) \quad \sin A \cot C = \cot c \sin b - \cos b \cos A.$$

$$(43) \quad \sin A \cos b = \cos B \sin C + \sin B \cos C \cos a.$$

$$(44) \quad \sin A \cos c = \cos C \sin B + \sin C \cos B \cos a.$$

$$(45) \quad \sin a \cot b = \cot B \sin C + \cos C \cos a.$$

$$(46) \quad \sin a \cot c = \cot C \sin B + \cos B \cos a.$$

$$(47) \quad \cos A = \sin B \sin C \cos a - \cos B \cos C.$$

Putting $s = \frac{1}{2}(a+b+c)$ and $S = \frac{1}{2}(A+B+C)$,

$$(48) \quad \sin \frac{1}{2} A = \pm \sqrt{\frac{\sin(s-b) \sin(s-c)}{\sin b \sin c}}.$$

$$(49) \quad \cos \frac{1}{2} A = \pm \sqrt{\frac{\sin s \sin(s-a)}{\sin b \sin c}}.$$

$$(50) \quad \tan \frac{1}{2} A = \pm \sqrt{\frac{\sin(s-b) \sin(s-c)}{\sin s \sin(s-a)}}.$$

$$(51) \quad \sin \frac{1}{2} a = \pm \sqrt{\frac{-\cos S \cos(S-A)}{\sin B \sin C}}.$$

$$(52) \quad \cos \frac{1}{2} a = \pm \sqrt{\frac{\cos(S-B) \cos(S-C)}{\sin B \sin C}}.$$

$$(53) \quad \tan \frac{1}{2} a = \pm \sqrt{\frac{-\cos S \cos(S-A)}{\cos(S-B) \cos(S-C)}}.$$

$$(54) \quad \sin \frac{1}{2} A \sin \frac{1}{2} (b+c) = \pm \sin \frac{1}{2} a \cos \frac{1}{2} (B-C).$$

$$(55) \quad \sin \frac{1}{2} A \cos \frac{1}{2} (b+c) = \pm \cos \frac{1}{2} a \cos \frac{1}{2} (B+C).$$

$$(56) \quad \cos \frac{1}{2} A \sin \frac{1}{2} (b-c) = \pm \sin \frac{1}{2} a \sin \frac{1}{2} (B-C).$$

$$(57) \quad \cos \frac{1}{2} A \cos \frac{1}{2} (b-c) = \pm \cos \frac{1}{2} a \sin \frac{1}{2} (B+C).$$

$$(58) \quad \tan^2 \frac{1}{2} K = \tan \frac{1}{2} s \tan \frac{1}{2} (s-a) \tan \frac{1}{2} (s-b) \tan \frac{1}{2} (s-c).$$

FORMULAS RESULTING FROM THE METHOD OF LEAST SQUARES.

Formulas for Combining Observations and Determining Probable Errors.

1. Direct observations of a quantity: n separate results, $m_1, m_2, \dots m_n$ of equal weight.

Most probable value of quantity, $z = \frac{[m]}{n}$. *

Residuals, $z - m_1 = v_1, z - m_2 = v_2, \dots z - m_n = v_n$.

Probable error of z , $r_0 = \pm 0.6745 \sqrt{\frac{[vv]}{n(n-1)}}$.

Probable error of a single observation, $r = \pm 0.6745 \sqrt{\frac{[vv]}{n-1}}$.

2. Direct observations of a quantity: n separate results, $m_1, m_2, \dots m_n$ of unequal weights, $p_1, p_2, \dots p_n$.

Most probable value of quantity, $z = \frac{[pm]}{[p]}$.

Probable error of z , $r_0 = \pm 0.6745 \sqrt{\frac{[p vv]}{[p](n-1)}}$.

Probable error of an obs'n of weight unity, $r = \pm 0.6745 \sqrt{\frac{[p vv]}{n-1}}$.

Weight of z , $P = [p]$.

Relation of weights to probable errors, $p_1 : p_2 : \dots : \frac{1}{r_1^2} : \frac{1}{r_2^2} : \dots$

3. If $Z = az_1 \pm bz_2 \pm \dots kz_n$, and the probable errors and weights of $z_1, z_2, \dots z_n$ are $r_1, r_2, \dots r_n$ and $p_1, p_2, \dots p_n$, then the probable error and weight of Z are given by

$$r = \pm \sqrt{(a r_1)^2 + (b r_2)^2 + \dots (k r_n)^2}.$$

$$\frac{1}{p} = \frac{a^2}{p_1} + \frac{b^2}{p_2} + \dots \frac{k^2}{p_n}.$$

4. In general, if $Z = f(z_1, z_2, \dots z_n)$, the probable error of Z is

$$r = \pm \sqrt{\left(\frac{df}{dz_1}\right)^2 r_1^2 + \left(\frac{df}{dz_2}\right)^2 r_2^2 + \dots + \left(\frac{df}{dz_n}\right)^2 r_n^2}.$$

5. Direct observations of a function of a quantity z : the separate results, $m_1, m_2, \dots m_n$ of equal weight, and the form of the function, az . The observation equations are

$$\begin{aligned} a_1 z + m_1 &= 0, \\ a_2 z + m_2 &= 0, \\ &\dots \dots \dots \\ a_n z + m_n &= 0. \end{aligned}$$

The most probable value of z and its probable error are

$$z = -\frac{[am]}{[aa]} \quad r = \pm 0.6745 \sqrt{\frac{[vv]}{[aa](n-1)}}.$$

If the observations are of unequal weights, multiply the observation equations through by the square roots of their respective weights, and proceed as before.

6. Direct observations of a function of two quantities, w and z : the separate

*The symbols $[]$ signify the sum of all similar quantities. Thus,

$[m] \equiv m_1 + m_2 + \dots + m_n$.
 $[p vv] \equiv p_1 v_1^2 + p_2 v_2^2 + \dots + p_n v_n^2$.

results, m_1, m_2, \dots, m_n of equal weights, and the form of the function, $aw + bz$. The observation equations are

$$\begin{aligned} a_1 w + b_1 z + m_1 &= 0, \\ a_2 w + b_2 z + m_2 &= 0, \\ \vdots & \\ a_n w + b_n z + m_n &= 0. \end{aligned}$$

The normal equations are

$$\begin{aligned} [a a] w + [a b] z + [a m] &= 0, \\ [a b] w + [b b] z + [b m] &= 0. \end{aligned}$$

Let

$$[b b] - \frac{[a b]}{[a a]} [a b] = [b b.1], \quad [b m] - \frac{[a b]}{[a a]} [a m] = [b m.1]$$

Then the most probable values of w and z are given by

$$\begin{aligned} z &= -\frac{[b m.1]}{[b b.1]}, \\ w &= -\frac{[a b]}{[a a]} z - \frac{[a m]}{[a a]}. \end{aligned}$$

The weights of w and z are

$$p_w = [b b.1], \quad p_z = \frac{[b b.1]}{[b b]} [a a].$$

The probable error of a single observation (of weight unity) is

$$r = \pm 0.6745 \sqrt{\frac{[v v]}{n-2}};$$

and the probable errors of w and z are

$$r_w = \frac{r}{\sqrt{p_w}}, \quad r_z = \frac{r}{\sqrt{p_z}}.$$

If the observations are of unequal weights, multiply the observation equations through by the square roots of their respective weights and proceed as before.

7. Direct observations of a function of three quantities, x, y and z : the separate results. m_1, m_2, \dots, m_n of equal weight, and the form of the function, $ax + by + cz$. The observation equations are

$$\begin{aligned} a_1 x + b_1 y + c_1 z + m_1 &= 0, \\ a_2 x + b_2 y + c_2 z + m_2 &= 0, \\ \vdots & \\ a_n x + b_n y + c_n z + m_n &= 0. \end{aligned}$$

The normal equations are

$$\begin{aligned} [a a] x + [a b] y + [a c] z + [a m] &= 0, \\ [a b] x + [b b] y + [b c] z + [b m] &= 0, \\ [a c] x + [b c] y + [c c] z + [c m] &= 0. \end{aligned}$$

Let

$$[b b] - \frac{[a b]}{[a a]} [a b] = [b b.1], \quad [b c] - \frac{[a b]}{[a a]} [a c] = [b c.1],$$

$$[b m] - \frac{[a b]}{[a a]} [a m] = [b m.1],$$

$$[c c] - \frac{[a c]}{[a a]} [a c] = [c c.1], \quad [c m] - \frac{[a c]}{[a a]} [a m] = [c m.1],$$

$$[c c.1] - \frac{[b c.1]}{[b b.1]} [b c.1] = [c c.2], \quad [c m.1] - \frac{[b c.1]}{[b b.1]} [b m.1] = [c m.2].$$

Then the most probable values of x , y and z are given by

$$\begin{aligned} z &= -\frac{[e\ m.2]}{[e\ e.2]}, \\ y &= -\frac{[b\ e.1]}{[b\ b.1]} z - \frac{[b\ m.1]}{[b\ b.1]}, \\ x &= -\frac{[a\ b]}{[a\ a]} y - \frac{[a\ e]}{[a\ a]} z - \frac{[a\ m]}{[a\ a]}. \end{aligned}$$

The weights of x , y and z are given by

$$\begin{aligned} p_z &= [e\ e.2], \\ p_y &= \frac{[e\ e.2]}{[e\ e.1]} [b\ b.1], \\ p_x &= \frac{[e\ e.2]}{[e\ e.1]} \cdot \frac{[b\ b.1]}{[b\ b]} [a\ a], \end{aligned}$$

in which

$$[e\ e.1]_a = [e\ e] - \frac{[b\ e]}{[b\ b]} [b\ e].$$

The probable error of a single observation (of weight unity) is

$$r = \pm 0.6745 \sqrt{\frac{[v\ v]}{n-3}},$$

and the probable errors of x , y and z are

$$r_x = \frac{r}{\sqrt{p_x}}, \quad r_y = \frac{r}{\sqrt{p_y}}, \quad r_z = \frac{r}{\sqrt{p_z}}$$

If the observations are of unequal weights multiply the observation equations through by the square roots of their respective weights, and proceed as before.

CONSTANTS.

Mathematical and Astronomical Constants.

| | log. | |
|---|---|---------------|
| Base of natural logarithms | $\varepsilon = 2.71828183$ | 0.43429448 |
| Modulus of common logarithms | $\mu = 0.43429448$ | 9.63778431 |
| Radius of a circle in degrees | $\mathcal{R} = 57.29578$ | 1.75812263 |
| “ “ “ “ minutes | $\mathcal{R}' = 3437.7468$ | 3.53627388 |
| “ “ “ “ seconds | $\mathcal{R}'' = 206264.806$ | 5.31442513 |
| Circumference of a circle in degrees | $\mathcal{C} = 360$ | 2.55630250 |
| “ “ “ “ minutes | $\mathcal{C}' = 21600$ | 4.33445375 |
| “ “ “ “ seconds | $\mathcal{C}'' = 1296000$ | 6.11260500 |
| Sine of one second | 0.000004848137 | 4.68557487 |
| | $\pi = 3.14159265$ | 0.49714987 |
| | $\frac{1}{\pi} = 0.31830989$ | 9.50285013 |
| | $\pi^2 = 9.86960440$ | 0.99429975 |
| | $\sqrt{\pi} = 1.77245385$ | 0.24857494 |
| | $\sqrt[3]{\frac{\pi}{6}} = 0.80599598$ | 9.90633287 |
| Mean solar days in a Julian year | 365.25 | 2.5625902 |
| “ “ “ “ sidereal “ | 365.25637 | 2.5625978 |
| “ “ “ “ tropical “ | 365.24222 | 2.5625809 |
| “ “ “ “ sidereal day | 0.99726957 | 9.9988126 |
| Sidereal “ “ mean solar day | 1.00273791 | 0.0011874 |
| Number of seconds in a day | 86400 | 4.9365137 |
| “ “ “ “ sidereal year | 31558150 | 7.4991115 |
| Square root of the attractive force of the sun (Gauss) k | 0.01720210 | 8.2355814 |
| “ “ “ “ “ “ in sec's k | 3548.18761 | 3.5500066 |
| Time required for light to traverse the distance from | | |
| the earth to the sun | 498'.57 | 2.6977261 |
| Equatorial horizontal parallax | 8".80 | 0.9444827 |
| Aberration constant | 20".52 | 1.3121774 |
| Nutation constant, according to Peters | $9''.2236 + 0''.000009$ | ($t-1850$). |
| General precession, according to Struve | $50''.2524 + 0''.0002268$ | ($t-1850$). |
| Precession constants for the equator, accord- } ing to Struve and Peters, (tropical year.) } | $m = 46''.0765 + 0''.0002849$ ($t-1850$) $n = 20''.0564 - 0''.0000863$ ($t-1850$). | |
| Obliquity of the ecliptic, according to Struve | $23^\circ 27' 30''.76 - 0''.4738$ ($t-1850$) $- 0''.0000014$ ($t-1850$). | |

Comparison of Linear Measures

| | | log. |
|--|-------------------------|-----------|
| 1 English inch | 0.02539977 metres | 8.4048298 |
| 1 " foot | 0.30479727 " | 9.4840111 |
| 1 " yard | 0.91439180 " | 9.9611323 |
| 1 metre | 3.28086933 English feet | 0.5159889 |
| 1 centimetre | * 0.39370432 " inches | 9.5951702 |
| 1 toise = 6 Paris feet | 1.94993631 metres | 0.2898199 |
| 1 Paris foot = 12 Paris inches | 0.32483938 " | 9.5116687 |
| 1 Paris inch = 12 Paris lines | 0.02706995 " | 8.4324874 |
| 1 Paris line | 0.00225583 " | 7.3533002 |

Dimensions of the Earth according to Bessel.

| | | log. |
|----------------------------------|--|-----------|
| Equatorial semi-axis | $a = 20923597$. feet | 7.3206363 |
| | 3962.8025 miles | 3.5980024 |
| | 6377397.15 metres | 6.8046435 |
| Polar semi-axis | $b = 20853654$. feet | 7.3191822 |
| | 3949.5557 miles | 3.5965482 |
| | 6356078.96 metres | 6.8031893 |
| Compression | $p = \frac{a-b}{a} = \frac{1}{299.1528} = 0.003342773$ | 7.5241069 |
| Eccentricity | $e = 0.08169683$ | 8.9122052 |
| Quadrant of a meridian | $Q = 10000855.76$ metres | 7.0000372 |

*Dimensions of the Earth according to Clarke (1866).**

| | | log. |
|---|--|-----------|
| Equatorial semi-axis | $a = 20926062$. feet | 7.3206875 |
| | 3963.3 miles | 3.5980536 |
| Polar semi-axis | $b = 20855121$. feet | 7.3192127 |
| | 3949.8 miles | 3.5965788 |
| Compression | $p = \frac{1}{294.9784} = 0.003390079$ | 7.5302098 |
| Eccentricity | $e = 0.08227189$ | 8.9152515 |
| Circumference of Equator | $= 24901.96$ miles | 4.3962335 |
| Perimeter of meridian ellipse | $= 24859.76$ " | 4.3954969 |
| Area of the Earth's surface | $= 196940400$ square miles. | |

*Constants for Conversion of English Weights and Measures to Metric, and vice versa.**

LINEAR.

| | |
|---|---------------------------------|
| 1 inch = 2.54001 centimetres. | 1 centimetre = 0.393700 inches. |
| 1 foot = 0.304801 metres. | 1 metre = 3.28083 feet. |
| 1 yard = 0.914402 " | 1 " = 1.09361 yards. |
| 1 mile = 1.60935 kilometres. | 1 kilometre = 0.62137 miles. |
| 1 nautical mile = 6080.27 feet = 1.1516 statute miles = 1.85235 kilometres. | |

SQUARE.

| | |
|--|--|
| 1 square inch = 6.4516 square centimetres. | 1 square centimetre = 0.15500 square inches. |
| 1 square foot = 0.0929 square metres. | 1 square metre = 10.7639 square feet. |
| 1 square yard = 0.8361 " " | 1 " = 1.196 square yards. |
| 1 square mile = 2.5900 square kilometres. | 1 square kilometre = 0.3861 square miles. |
| 1 acre = 0.4047 hectares. | 1 hectare = 2.4710 acres. |
| 1 square mile = 259.008 " | 1 square mile = 640 acres. |

CUBIC.

| | |
|---|--|
| 1 cubic inch = 16.3872 cubic centimetres. | 1 cubic centimetre = 0.06102 cubic inches. |
| 1 cubic foot = 0.02832 cubic metres. | 1 cubic metre = 35.3145 cubic feet. |
| 1 cubic yard = 0.76456 " " | 1 " = 1.3079 cubic yards. |

CAPACITY.

| | |
|---|---|
| 1 fluid dram = 3.70 cubic centimetres. | 1 cubic cm. = 0.27 fluid drams. |
| 1 fluid ounce = 29.57 " " | 1 " = 0.0338 fluid ounces. |
| 1 quart (U. S.) = 0.94636 litres. | 1 litre = 1.0567 quarts (U. S.). |
| 1 gallon (U. S.) = 3.78543 " | 1 " = 0.26417 gallons (U. S.). |
| 1 bushel (U. S.) = 0.35239 hectolitres. | 1 hectolitre = 2.8377 bushels (U. S.). |
| 1 gallon (British) = 4.54683 litres. | 1 litre = 0.21993 gallons (British). |
| 1 bushel (British) = 0.36348 hectolitres. | 1 hectolitre = 2.75121 bushels (British). |

* Adopted by the U.S. Coast and Geodetic Survey.

1 Imperial gallon (British), (1890) = 277.463 cubic inches.

1 gallon (U. S.) = 231. " "

1 bushel (U. S.) = 2150.42 " "

WEIGHT.

1 grain = 0.0647989 grammes. 1 gramme = 15.4324 grains.

1 oz. avoird. = 28.3495 " 1 kilogramme = 35.2739 oz. avoird.

1 lb. " (= 7000 grs.) = 0.45359 kilog. 1 " = 2.20462 lbs. "

1 oz. Troy = 31.10348 grammes. 1 " = 32.1507 oz. Troy.

1 lb. " (= 5760 grs.) = 0.37324 kilog. 1 " = 2.6792 lbs. "

1 ton of 2000 lbs. = 0.907186 tonnes. 1 tonne = 1.10231 tons of 2000 lbs.

1 " 2240 " = 1.01605 " 1 " = 0.98421 " 2240 lbs.

VELOCITY.

1 foot per sec. = 0.6818 miles per hour = 1.0973 kilometres per hour.

1.4667 feet " = 1 mile " = 1.6093 " "

0.9113 " " = 0.6214 miles " = 1 kilometre "

1 metre per second = 2.2369 miles per hour.

FORCE. ($g = 981$ cm.)

Weight of 1 gramme = 981 dynes. 1 dyne = weight of 0.001019 grammes.

" 1 grain = 63.57 " 1 " = " 0.01573 grains.

1 poundal = 13825.5 " 1 " = 7.2330×10^{-5} poundals.

STRESS.

1 lb. per sq. inch = 70.307 gms. per sq. cm. 1 gm. per sq. cm. = 0.01422 lbs. per sq. in.

1 " " foot = 4.8824 kg. " " 1 kg " m. = 0.20482 " " ft.

1 standard atmosphere = 1033 gms. per sq. cm. = 14.7 lbs. per sq. in.

WORK.

1 foot-poundal = 421.403 ergs. 1 erg = 2.3730×10^{-6} foot-poundals.

1 joule = 10^7 " 1 megalerg = 10^6 ergs.

1 foot-pound ($g = 981$ cm.) = 1356.3×10^4 ergs = 0.138255 kilogramme-metres.

1 kilogramme-metre ($g = 981$ cm.) = 981×10^5 ergs = 7.2330 foot-pounds.

RATE OF DOING WORK.

1 horse-power = 746 watts = 1.01387 force de cheval.

1 force de cheval = $735\frac{3}{4}$ " = 0.98632 horse-power.

1 horse-power = 33000 foot-pounds per minute ($g = 981$ cm.)

1 watt = 44.2385 " " "

1 force de cheval = 75 kilogramme-metres per second "

PHYSICAL CONSTANTS.

1 cm. inch of distilled water at 4° C. weighs 252.568 grains = 16.3662 grammes.

1 " " " 62° F. " 252.286 " = 16.3479 "

1 cm. foot " " 62° F. " 62.2786 lbs. avoird.

1 " of dry air 32° F., pressure 760 mm., weighs 565.1 grains.

1 litre " " 0° C., " " " 1.29305 grammes.

Acceleration of gravity at the sea level for the latitude ϕ (Harkness),

in feet per sec., $g = 32.086528 + 0.171293 \sin^2 \phi$;

in metres per sec., $g = 9.779886 + 0.052210 \sin^2 \phi$.

Value of g at equator = 9.7799 m. per sec.; at poles = 9.8321; at Greenwich = 9.8117;

at Paris = 9.8094; at Washington = 9.8007.

Length of seconds pendulum at sea level for latitude ϕ (Harkness),

$l = 39.012540 + 0.208268 \sin^2 \phi$ inches = $0.990910 + 0.005290 \sin^2 \phi$ metres.

Velocity of light in vacuum, according to Newcomb,

186326 miles per second = 299860 km. per second.

Velocity of sound in dry air = $1090 \sqrt{1 + 0.00367 t^{\circ} \text{C.}}$ feet per second.



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